COMPUTATIONAL FLUID DYNAMICS SIMULATION OF ROTOR COOLING SYSTEM IN INTERIOR PERMANENT MAGNET MOTOR

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RESEARCH REPORT SUBMITTED TO THE FACULTY OF ENGINEERING, UNIVERSITY MALAYA, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER IN MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING
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Name of Candidate: Muhammad Amirul Asri Bin Ahmad Lukman

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Name of Degree: Master of Mechanical Engineering

Title of Project Dissertation ("this Work"): Computational Fluid Dynamics Simulation of Rotor Cooling System in Interior Permanent Magnet Motor

Field of Study: Computational Fluid Dynamics

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COMPUTATIONAL FLUID DYNAMICS SIMULATION OF ROTOR COOLING SYSTEM IN INTERIOR PERMANENT MAGNET MOTOR

ABSTRACT

This study presents a interior permanent magnet (IPM) motor using rotor cooling to enhance the cooling system of the motor. The IPM motor applies the forced cooling method where channels were provided in the entire motor from its' housing to the rotor through the designated paths in the cooling system. This designated paths consists of upper housing, housing jacket, lower housing, and hollow shaft. With the cooling system circulation inside the IPM motor, an effective cooling can be achieved as compared to the conventional approach of cooling. A modified coolant path is designed for optimization with different coolant used between water and oil. Once the cooling boundary was selected, the numerical model of the Motor Housing Cooling System of the IPM will be modelled and simulated. Temperatures at different locations of different coolant path design and coolant medium of water and oil were modelled and the numerical results is presented. After iterations, Case 1 suggests oil as a better cooling medium. However, in Case 2, the manipulation of motor housing of the coolant path itself influence the cooling effect and suggests the same cooling effect can be achieved at midpoint of the housing coolant path. Although the outlet of Case 2 suggests a lesser cooling effect, this finding where the improved housing coolant path opens the possibility of further study towards a better understanding of the characteristics of the cooling effect and finally optimize by saving on oil consumption whilst optimizing the pattern of the coolant path.

SIMULASI PENGIRAAN DINAMIKA BENDALIR SISTEM PENDINGIN ROTOR DI MOTOR MAGNET KEKAL DALAMAN

ABSTRAK

Kajian ini meyampaikan motor magnet kekal dalaman (IPM) menggunakan penyejukan rotor untuk meningkatkan system penyejukan motor. Motor IPM menggunakan kaedah penyejukan paksa di mana saluran disediakan di seluruh bahagian motor dari bahagian penutup motor ke bahagian pemutar melalui laluan yang ditentukan dalam sistem penyejukan. Laluan yang ditentukan ini terdiri daripada bahagian penutup atas, jaket penutup, penutup rendah, dan poros berongga. Dengan peredaran sistem penyejukan di dalam motor IPM, penyejukan yang berkesan dapat dicapai berbanding dengan pendekatan penyejukan konvensional. Jalur penyejuk yang diubahsuai akan direka bentuk untuk dioptimumkan dengan menggunakan penyejuk berbeza antara air atau minyak. Setelah batas penyejukan dipilih, model berangka Sistem Penyejukan Penutup Motor dari IPM akan dimodelkan dan disimulasikan. Suhu di lokasi yang berbeza dengan reka bentuk laluan penyejuk yang berbeza dan medium penyejuk air dan minyak dimodelkan dan hasil berangka ditunjukkan. Selepas pengiraan simulasi, Kes 1 mencadangkan minyak sebagai medium penyejukan yang lebih baik. Walau bagaimanapun, dalam Kes 2, manipulasi bentuk penutup motor laluan penyejuk itu sendiri mempengaruhi kesan penyejukan dan menunjukkan kesan penyejukan yang sama dapat dicapai pada titik tengah jalan penyejuk perumahan. Walaupun jalan keluar Kes 2 menunjukkan kesan penyejukan yang lebih rendah, penemuan ini di mana jalan penyejuk penutup yang lebih baik membuka kemungkinan kajian yang lebih lanjut ke arah pemahaman yang lebih baik mengenai ciri-ciri kesan penyejukan dan akhirnya mengoptimumkan dengan menjimatkan penggunaan minyak sambil mengoptimumkan pola jalan penyejuk.

ACKNOWLEDGEMENTS

First and foremost, I would like to express my heart filled gratitude to God for his guidance and blessing throughout my study years in Universiti Malaya. Not forgetting the family especially my wife, parents, and my sincere gratitude for their love and support to further my Masters studies in Universiti Malaya.

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My sincere thanks to the University, Faculty of Engineering, and the Deputy Dean's Office (Postgraduate) for their support to assist me in technical and management matters during this research project.

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LIST OF SYMBOLS AND ABBREVIATIONS

IPM	:	Interior Permanent Magnet
CFD	:	Computational Fluid Dynamics
ANSYS	:	Analysis Systems Inc.

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CHAPTER 1: INTRODUCTION

1.1 Background of the project

Electrical Vehicles have been increasing in its' research and development in the past few years due to its friendliness towards the environment as compared to vehicles fueled by petrol. While many factors contribute to the performance of any types of electric vehicles, the capacity of electrical motors is the major issue while various research and development institutions tries to achieve its' purpose in achieving fuel efficiency. There are few approaches essential in increasing the power of the motor while reducing the weight of the motor and the total weight of the vehicle itself. The first approach that is to be considered in the design concept is to increase motor power by the design of the electromagnet itself, while the second approach is to implement an efficient cooling design to increase the performance of the motor. The motor power can be increased by modifying the design of the electromagnetic interior permanent magnet (IPM) structure. This modification could reduce motor temperature subject to the method that is applied to reducing the heat from the motor heat loss operation. This shall also cause increase in better motor power at the same size of the motor specification.

In increasing the effectiveness of cooling on the motors, location such as coil which is important to motor current flow, core where iron loss happens, interior magnet where eddy current occurs, and bearing where mechanical friction loss occurs. When temperature limits for the magnet and class coil varies, rotor is the most critical temperature locations where the permanent magnet is installed and, in the stator, where the coil is wound. When eddy current loss at the permanent magnet increases as the rotor rotation increases, a more efficient cooling method should be considered for both the rotor and stator.

Figure 1.1(a) shows the housing jacket cooling type motor 2D coolant path and Figure 1.1(b) shows its' 3D diagram. As shown in Figure 1.1(a), the coolant will start to enter the upper case at (1) before it circulates in the housing jacket at (2), then at lower case (3), and the hollow shaft at (4) before it exits through the upper case at (5).

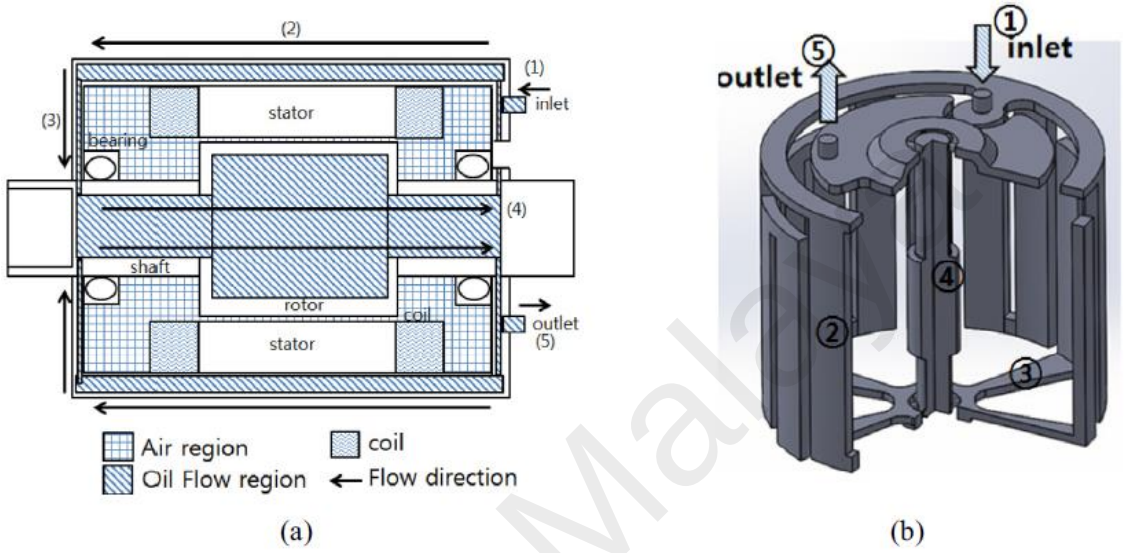

Figure 1.1: (a) Housing jacket cooling type motor 2D coolant path; (b) 3D housing diagram

At systemic view, the whole system of an IPM motor cooling can be depicted in the example of experimental bench installation shown in Figure 1.2 as studied by (Davin et al., 2015). While the scope of the study looks into the isolation of region number 1 (tested machine), it is beneficial to understand the systemic view that supports a typical IPM motor cooling. Note that the complexity of motor from this experimental study differs from the design of the scope of this research project.

Briefly, this installation contains a water loop to cool the flange, an oil loop and water loop to achieve oil bath-regulated cooling. While the last loop, has temperatures and flow rates measured in precision. The flow rate of the water is being kept low to increase the temperature difference between the input and the output as show in Figure 1.2 reported by (Davin et al., 2015). A point to note, in this experimental setup, a current source is installed to generate constant losses in the windings causing the Joule effect.

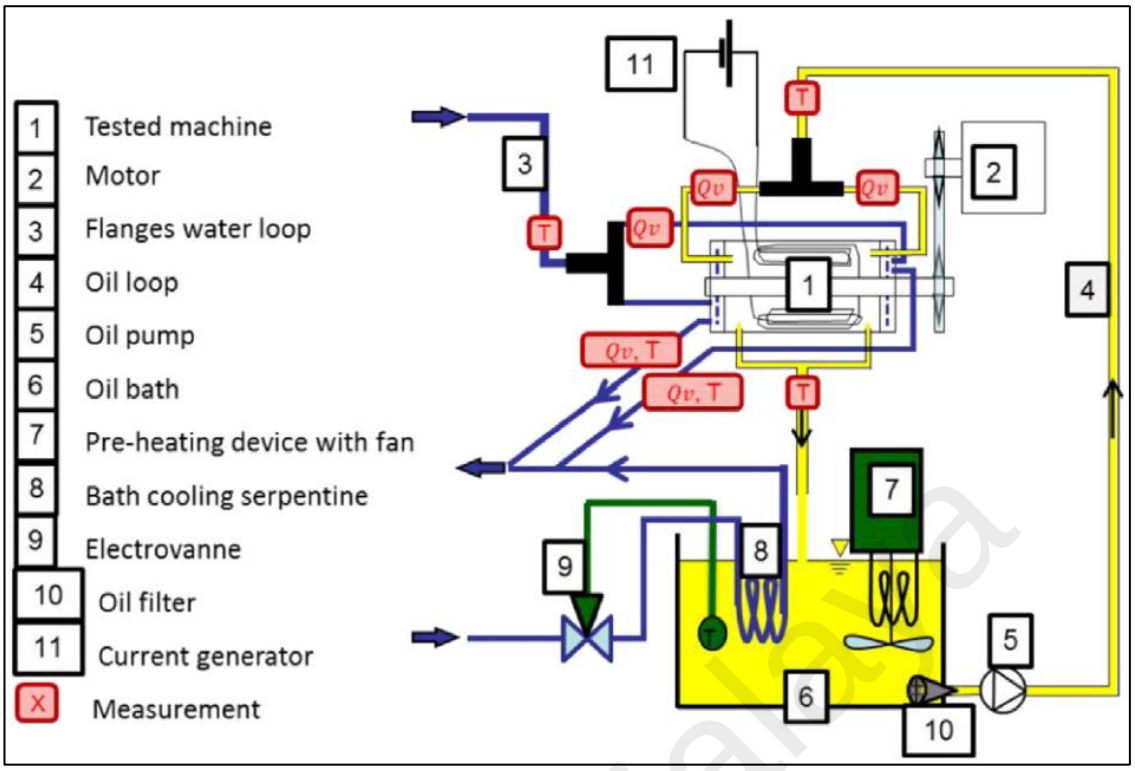

Figure 1.2: Example of Experimental Bench Installation (Davin et al., 2015)

To summarize, the system provides the cooling effect to the motor through the housing via continuous circulation of the coolant where the coolant will be discharge from the housing upper case at (5) as explained in figure 1.1(a), and treated before being circulated back to upper case at (1) for continuous motor cooling. Note that, for this research project, it will be assumed that different setup might be used to treat different coolant of either oil or water but the same concept of continuous cooling system will be used for recirculation.

1.2 Problem Statement

Research had been done to investigate the effect of cooling in a motor design by using experimental and numerical analysis for effective cooling of the motor temperature.

The present use of coolant such as oil and water reported effective cooling method for both at different motor application and design.

In an Interior Permanent Magnet Motor (IPM), the cooling effect of the motor temperature from the inner motor housing to the outer motor housing requires numerical simulation as there are no suitable numerical design yet to investigate specific motor

housing design as mostly researches are done for particular industry and manufacturer in an expensive experimental settings.

In previous research, a 3D cooling method is introduced for rotor cooling with a hollow shaft and for stator cooling with an external jacket. One design parameter for this cooling method which is the coolant flow channel design pattern of the housing is considered.

As past researches look into experimental investigation of specific case of coolant method for specific motor design, this project aims to numerically simulate the result of varying coolant medium of oil and water and characterize the temperature profile with various motor housing coolant path design of different patterns.

1.3 Objectives

(i) To determine the temperature profile at inlet and outlet of the inner and outer housing for water as the cooling medium

(ii) To determine the temperature profile at inlet and outlet of the inner and outer housing for oil as the cooling medium.

(iii) To characterize the temperature profile of both oil or water for a different coolant path housing design.

Objective (iii) aims to achieve the same objective (i) and (ii) but with different coolant path housing design which will be categorized as “Case 2” in the study.

1.4 Scope of the work

To study the cooling effect for different coolant medium between water or oil respectively with different coolant path design in the implementation of an effective Interior Permanent Magnet (IPM) Motor cooling design. The study will look into an isolated region between the inlet and the outlet of the motor housing and also the isolation between the inner housing of the motor and the outer housing of the motor.

In this research project, gasoline will be used to present the oil and table 1.1 below shows the oil and water properties that will be defined respectively for each case.

Table 1.1: Oil & Water Properties

Type of fluid / Properties	Density, (kg/m3)	Specific Heat, Cp (J/Kg-K)	Thermal Conductivity, (W/m-K)	Viscosity, (kg/m-s)	Fluent Fluid Materials Name (Chemical Formula)
Water	998.2	4182	0.6	0.001003	water-liquid (h2o<|>)
Oil	830	2050	0.135	0.00332	gasoil-liquid (c16h29<|>)

CHAPTER 2: LITERATURE REVIEW

2.1 Overview of cooling method of a motor

Several studies were done on motor cooling with a variety of cooling methods. These methods utilize different cooling medium. As an example, a liquid nitrogen is utilized while the motor is rotating to achieve the objective in cooling the motor itself as reported by (Matsuzaki et al., 2005). While it is important to look into cooling medium in achieving efficiency, there are other methods such as modification of the motor and its' component design in achieving the most optimum cooling effect for the motor.

2.2 Lubricating oil as a coolant

By its nature, motor requires an experimental approach to validate the theoretical, analytical, and numerical analysis in studying its cooling effectiveness. Davin et al., (2015), in its' experimental study for electrical motors, utilized lubricating oil as a coolant. In this experimental approach, different oil cooling injection approach were investigated to improve the cooling effect to motor. Note that this experimental approach considers a systemic solution of oil for motor cooling. Lim and Kim., (2014) in their study, proposed the cooling system of an in-wheel motor to use oil spray in electric vehicles using a hollow shaft. While we look at the importance of experimental results in investigating the effect of oil as cooling, the performance increase of a motor is proven by using oil as a cooling method to decrease operating temperature of traction motors as reported by (Huang et al., 2012). These type of coolant utilizing oil, further enhanced the credibility of using oil as a coolant.

2.3 Water and air as a cooling medium

While oil is well known as cooling medium, research had been done to investigate the cooling effect of air and water. Kim et al., (2005) in the numerical investigation and optimization of the thermal performance of a brushless DC motor, is using air cooling while increasing cooling efficiency by optimization of the coolant path. Another aspect that was look into is how a 3D steady-state temperature field distribution of air-cooled and water-cooled high speed permanent magnet motor under the rater load was look into by (Zhang et al., 2013). One thing that must be noted is most research investigation look into the stator or housing as the method of cooling. This is when it is important to understand that there are very limited research that has been done on the shaft cooling. A point to note is that an investigation of rotor cooling where hollow shaft is used for large electrical machines for application instead of compact Interior Permanent Magnet Motor (IPM) as reported by (Gerstler et al., 2011). Current studies will not discount these studies of having air and water as cooling medium.

2.4 3D finite modelling – an efficient and effective way of minimizing experimental cost

While experimental research and investigation is important in the development of understanding the cooling effect, it is known that it is always costly and timely to do its' setup. Plus, failure in experiments shall cost more to the research itself. 3D finite modelling has been known as an effective way of minimizing the research and development cost while exploring more design options in achieving an optimum cooling design. This numerical results were studied by (Huang et al., 2012) and (Zhang et al., 2013) for oil cooling and air/water cooling respectively. Previous studies does not compare oil and air/water in one unique numerical study of a specific design.

CHAPTER 3: METHODOLOGY

3.1 Analysis technique

The numerical simulation will be used in this project to analyze the temperature changes in the motor housing ranging from interior to the exterior body of the housing. The numerical simulation will input varying parameters by for further analysis by using computational fluid dynamics. The results of these simulation will be compared and further analysis will be continued.

The simulation will first be modelled in design modeler of the software before meshing. Figure 3.1 below shows an example of the model Meshing in ANSYS Fluent.

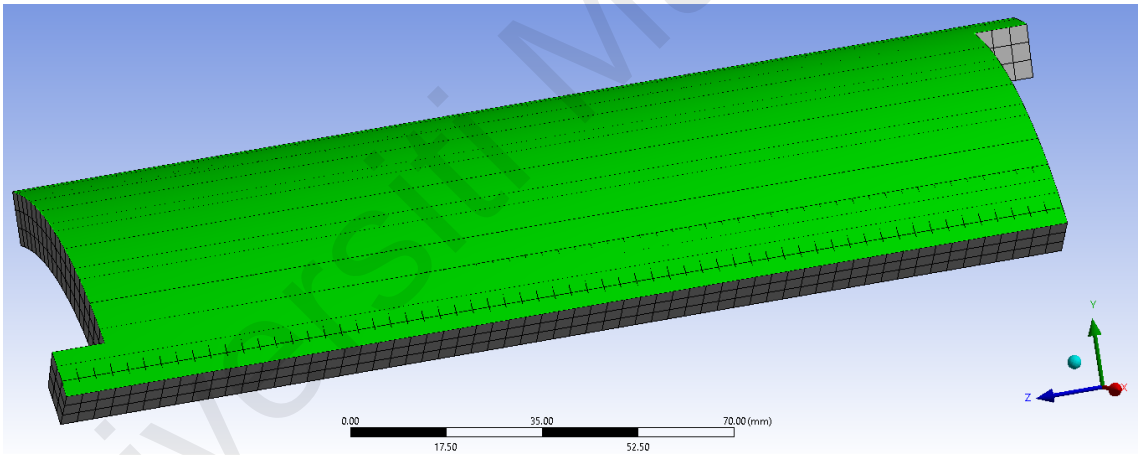

Figure 3.1: Model of housing meshing in ANSYS Fluent

After finish meshing and confirming there are no issues with the mesh, the setup will be done in Fluent where these will be set up before running iteration;

(i) Models

(ii) Materials

(iii) Boundary Conditions

(iv) Methods

Then, a standard initialization will be done computing from inlet of the model before running the iteration. Once iteration is converged, the results will be obtained and reported in Chapter 4. All the console reports for setup and iteration, along with the residuals in ANSYS Fluent is reported in Appendix.

3.2 Required software

For the numerical simulation, ANSYS Fluent software is used to model the motor housing until the setup and iterations prior to modelling the results in post processing.

3.3 Execution flow chart

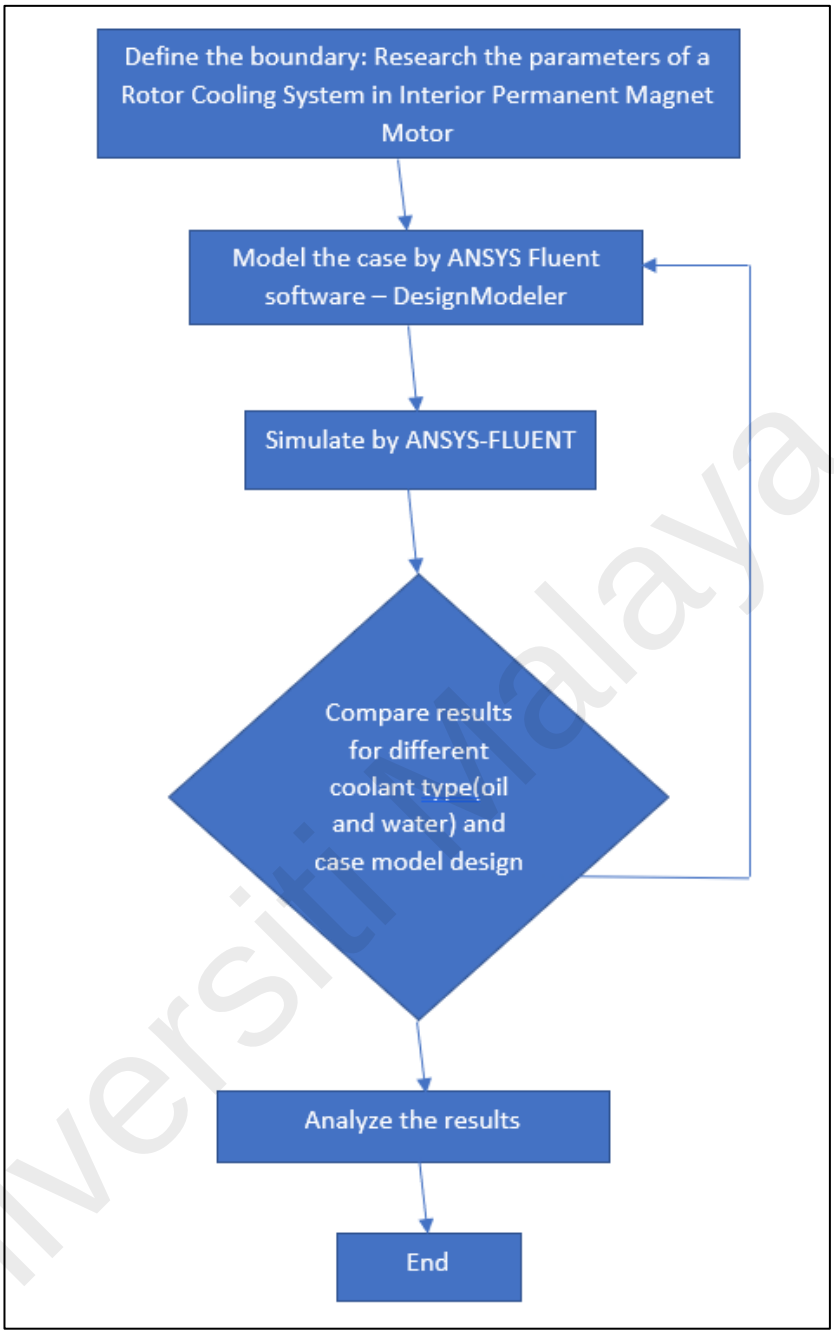

Figure 3.2: Execution Flow Chart

In this research paper, the research will be initiated by defining the boundary and researching its' parameters which is relevant to the application available in other research. The important parameters includes the inlet velocity of the cooling medium, the Oil and Water properties, and the inner housing temperature of the motor housing. Then, modelling will be done in ANSYS Fluent modelling software which is called DesignModeler although there are some option such as using SolidWorks and converting

the model to be used in ANSYS DesignModeler. Then, simulation will be done by running iteration. Once convergence is achieved, the results will be checked for sanity before proceeding to model the case for a different type of coolant. This cycle shall continue with different housing coolant path design with different type of coolant as per the objectives. The results will be analyzed for conclusion of the research project.

3.4 Gannt Chart

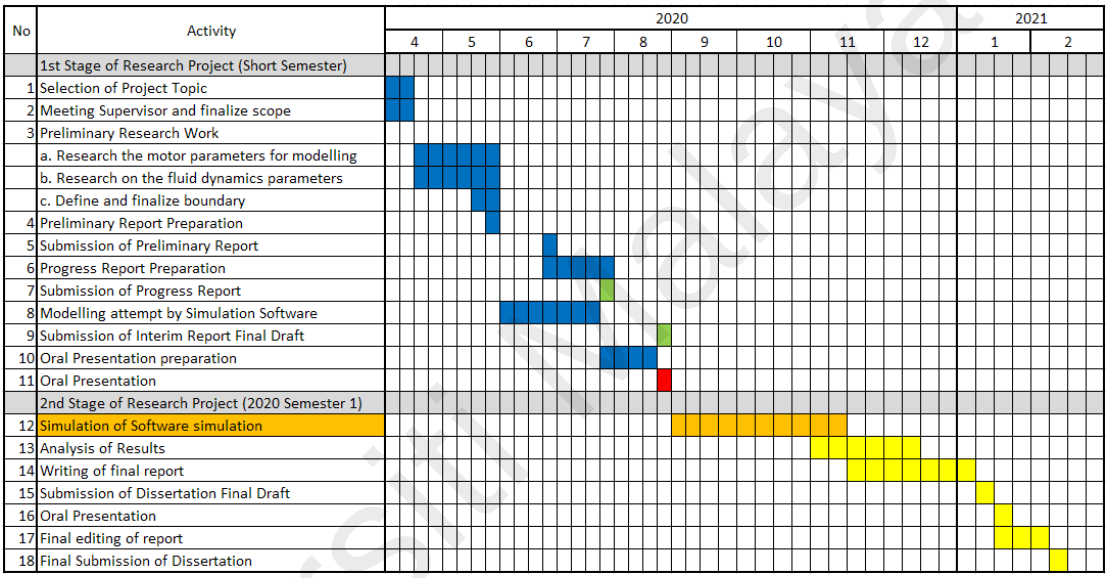

Figure 3.3: Gantt Chart for Research Project Planning

CHAPTER 4: RESULTS AND DISCUSSION

4.1 Case 1

Figure 4.1 below shows the velocity vectors for Case 1 regardless of the cooling medium. Here we can see the two straight lines as the datum to represent the inlet and the outlet of the housing in the discussion and analysis section. These two straight lines shown in the figure remain at the same coordinate in both water and oil cases for the Case 1 model. The straight lines will be described as inlet and outlet lines for representation and to demarcate the data for analysis and shown in yellow and red color respectively in the figure. The line presentation means a coordinated plotted from the inner housing towards the outer housing.

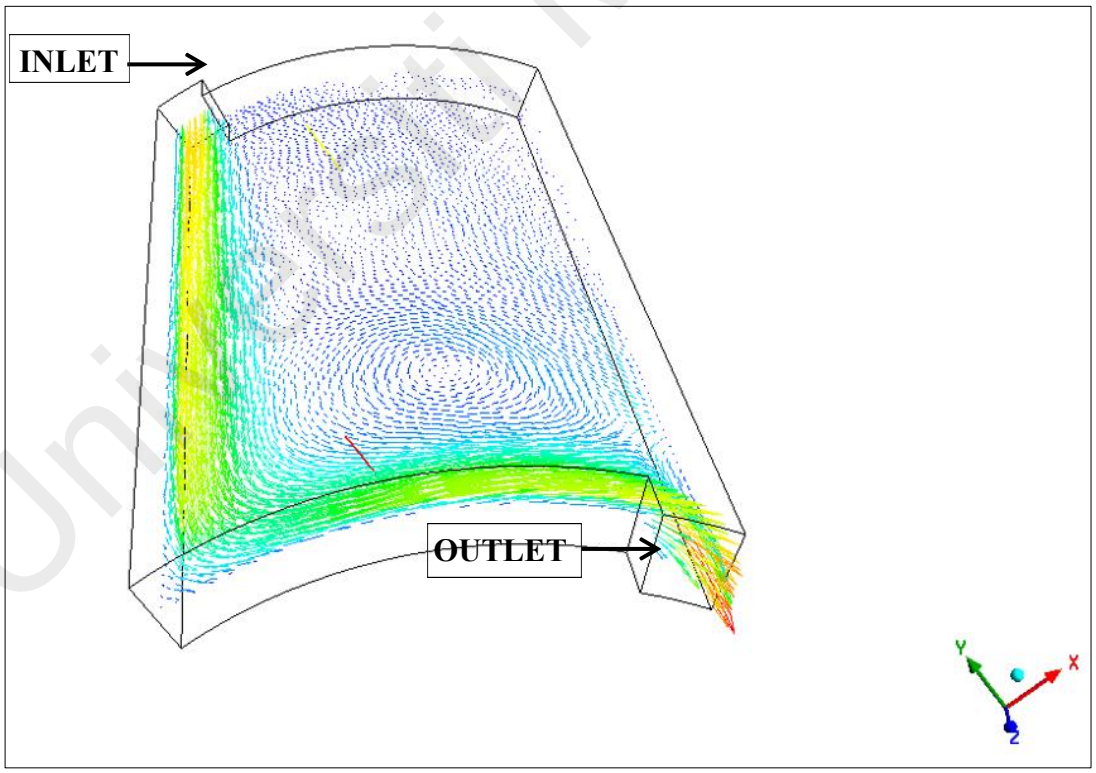

Figure 4.1: Datum Line representing Case 1 at Inlet and Outlet of housing

4.1.1 Water

Figure 4.2 below shows the velocity vectors for Case 1 with water as the cooling medium. Here the two straight lines can be seen as the datum to represent the inlet and the outlet of the housing in the discussion and analysis section. Velocity vector direction are also shown through the path as shown in this figure.

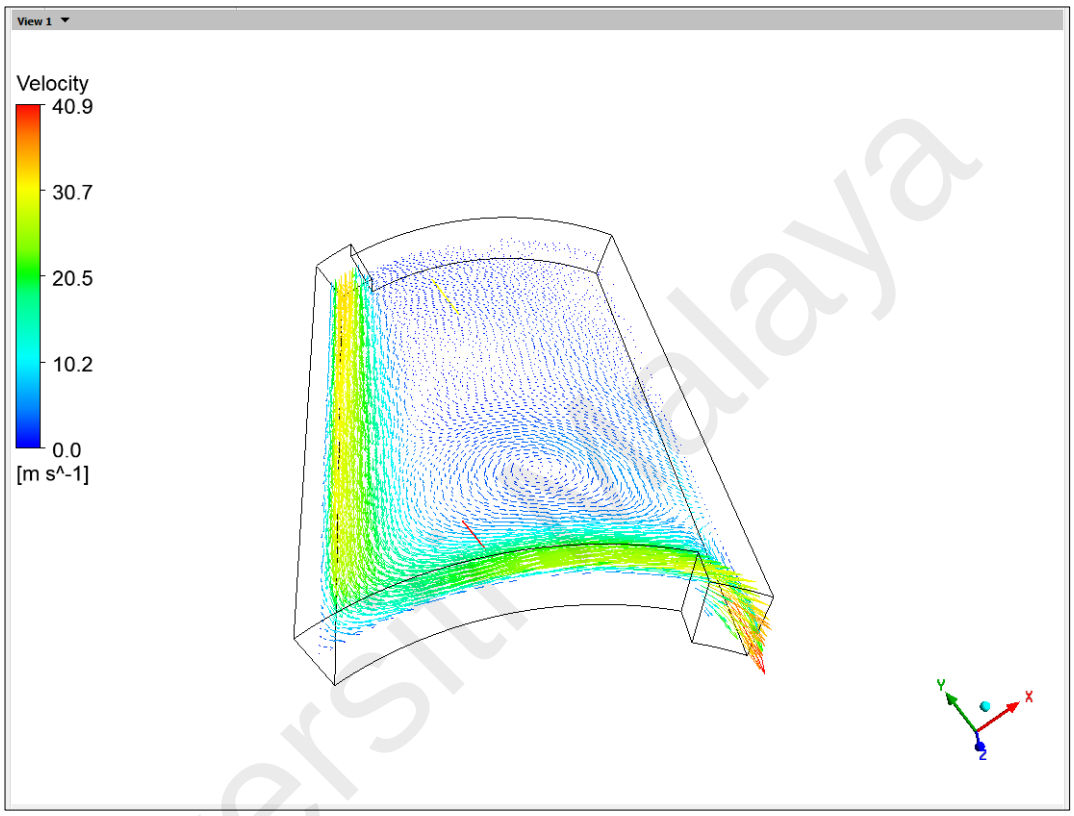

Figure 4.2: Velocity Vectors for Case 1 - Water

Figure 4.3 and Figure 4.4 below shows the graph plot of temperature profile from the inner housing going towards the outer housing in Y-axis of the coordinate as modelled in ANSYS. As explained in section 4.1, Figure 4.3 will be the temperature profile for the inlet of the housing while Figure 4.4 is the temperature profile at the outlet of the housing.

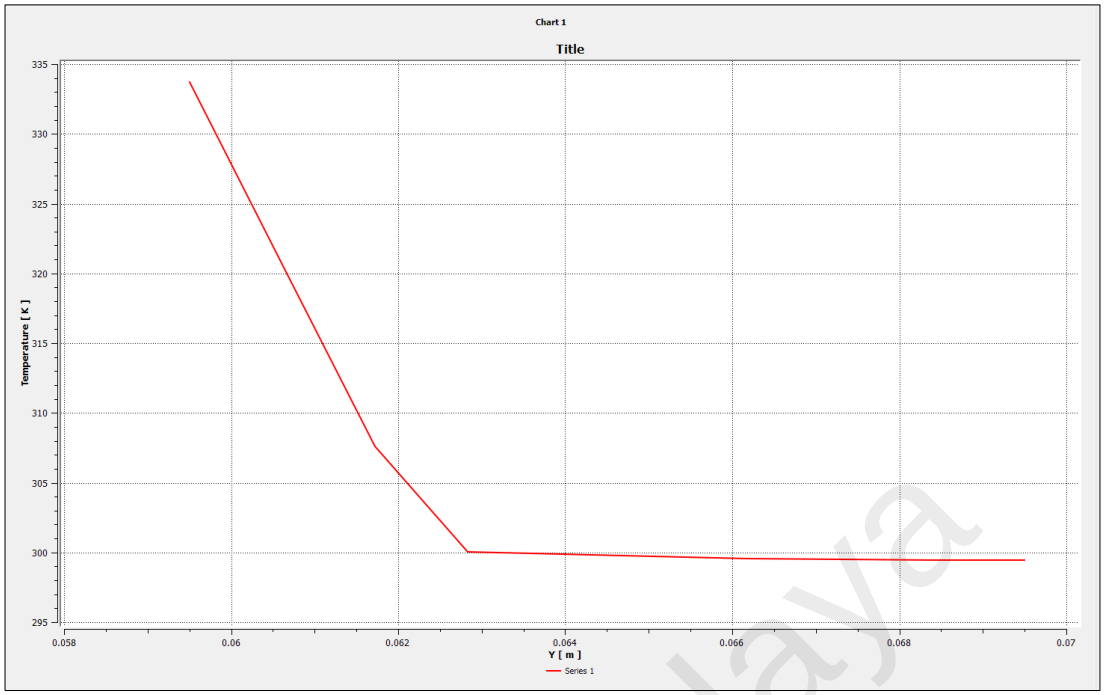

Figure 4.3: Temperature profile at Inlet for Case 1- Water

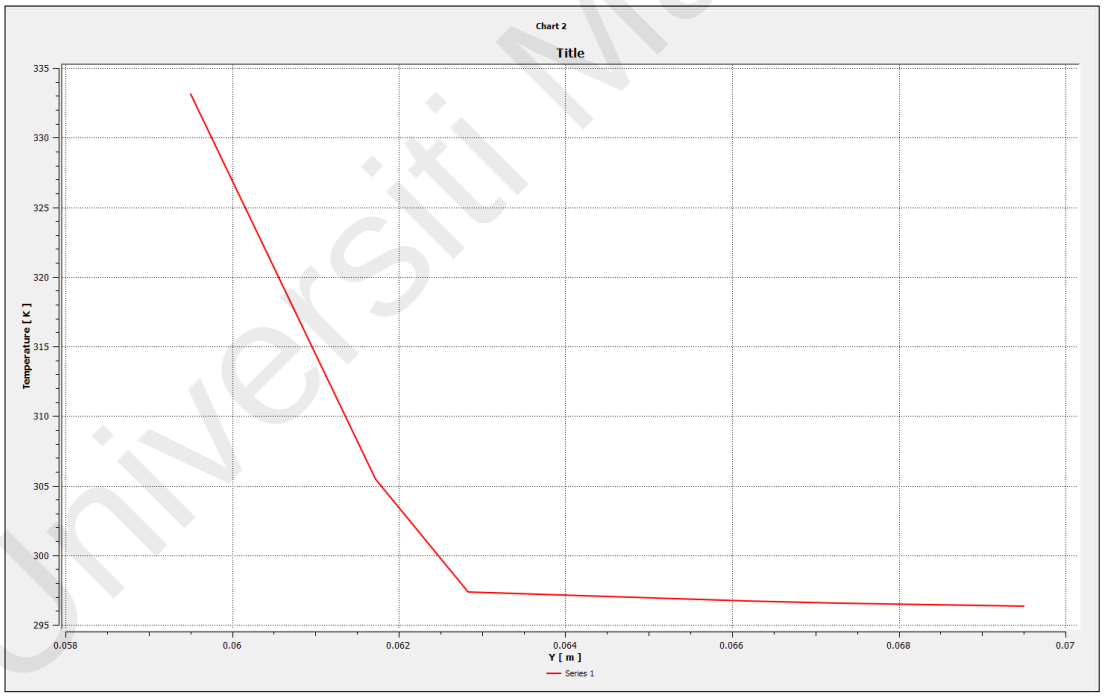

Figure 4.4: Temperature profile at Outlet for Case 1 - Water

4.1.2 Oil

Figure 4.5 below shows the velocity vectors for Case 1 with oil as the cooling medium. Here, the two straight lines can be seen as the datum to represent the inlet and the outlet of the housing in the discussion and analysis section. Velocity vector direction are also shown through the path as shown in this figure.

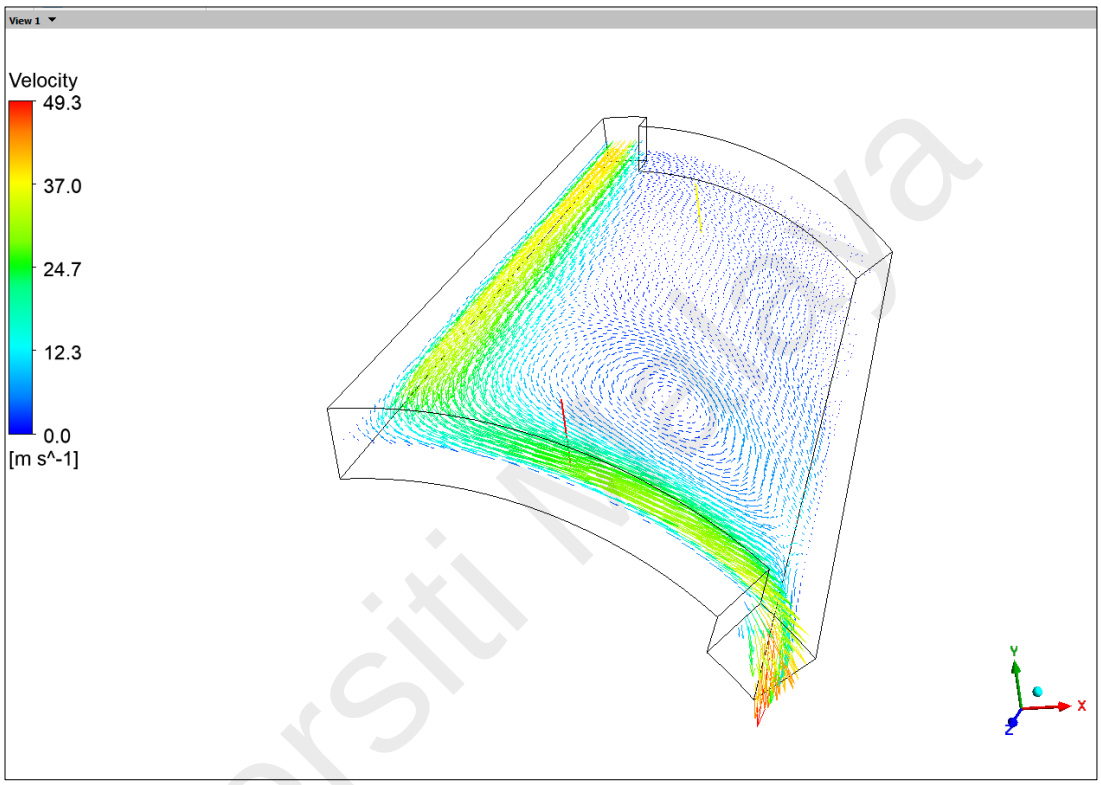

Figure 4.5: Velocity Vectors for Case 1 - Oil

Figure 4.6 and Figure 4.7 below shows the graph plot of temperature profile from the inner housing going towards the outer housing in Y-axis of the coordinate as modelled in ANSYS. As explained in section 4.1, Figure 4.6 will be the temperature profile for the inlet of the housing while Figure 4.7 is the temperature profile at the outlet of the housing.

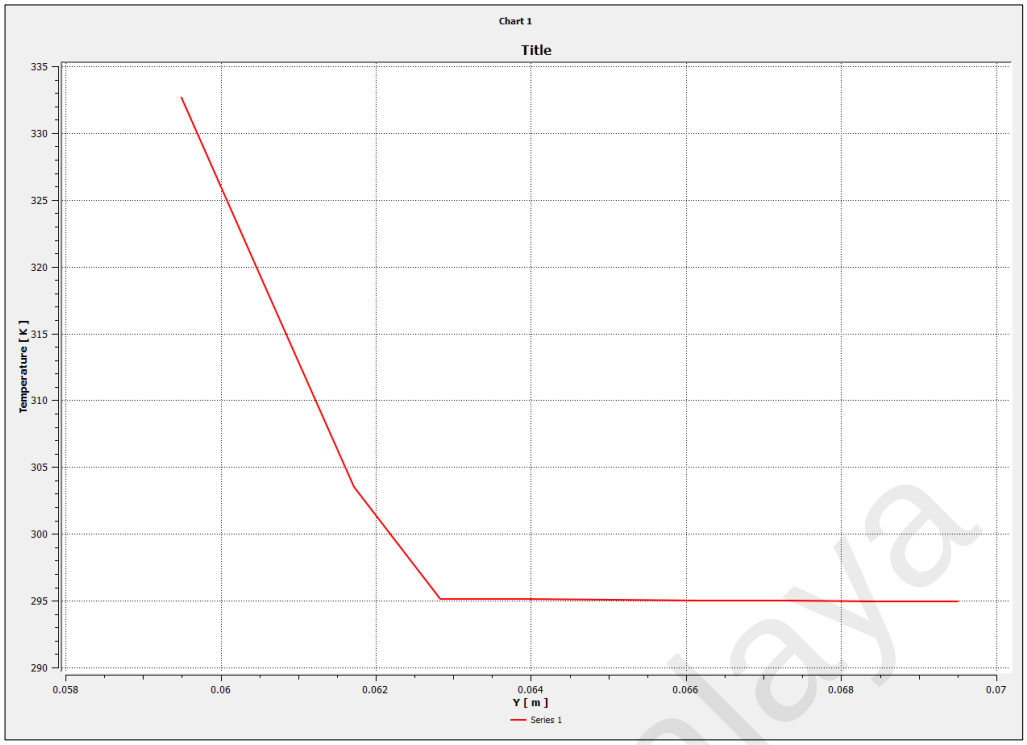

Figure 4.6: Temperature profile at Inlet for Case 1– Oil

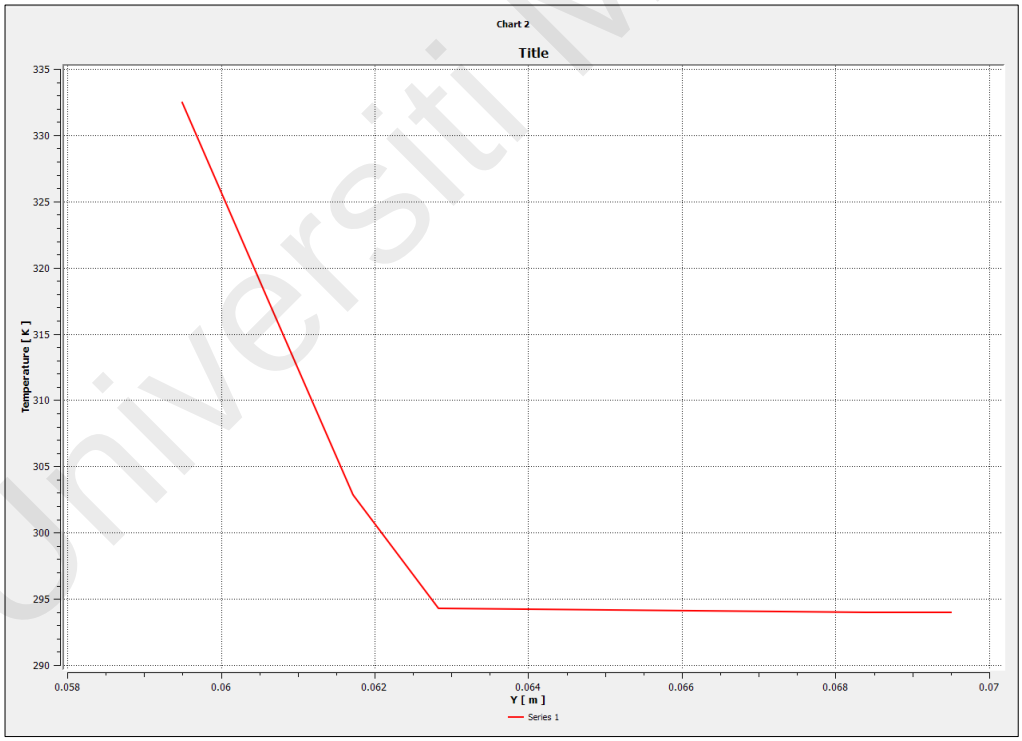

Figure 4.7: Temperature profile at Outlet for Case 1 – Oil

4.2 Case 2

Figure 4.8 below shows the velocity vectors for Case 2 regardless of the cooling medium. Here we can see the three straight lines instead of two as the datum to represent the inlet, midpoint and the outlet of the housing in the discussion and analysis section. These three straight lines shown in the figure remain at the same coordinate in both water and oil cases for the Case 2 model. The straight lines will be described as inlet, midpoint, and outlet lines for representation and to demarcate the data for analysis and shown in yellow, blue, and red color respectively in the figure. The line presentation means a coordinated plotted from the inner housing towards the outer housing. Note that the case 2 has a unique "zig-zag" design pattern as compared to Case 1.

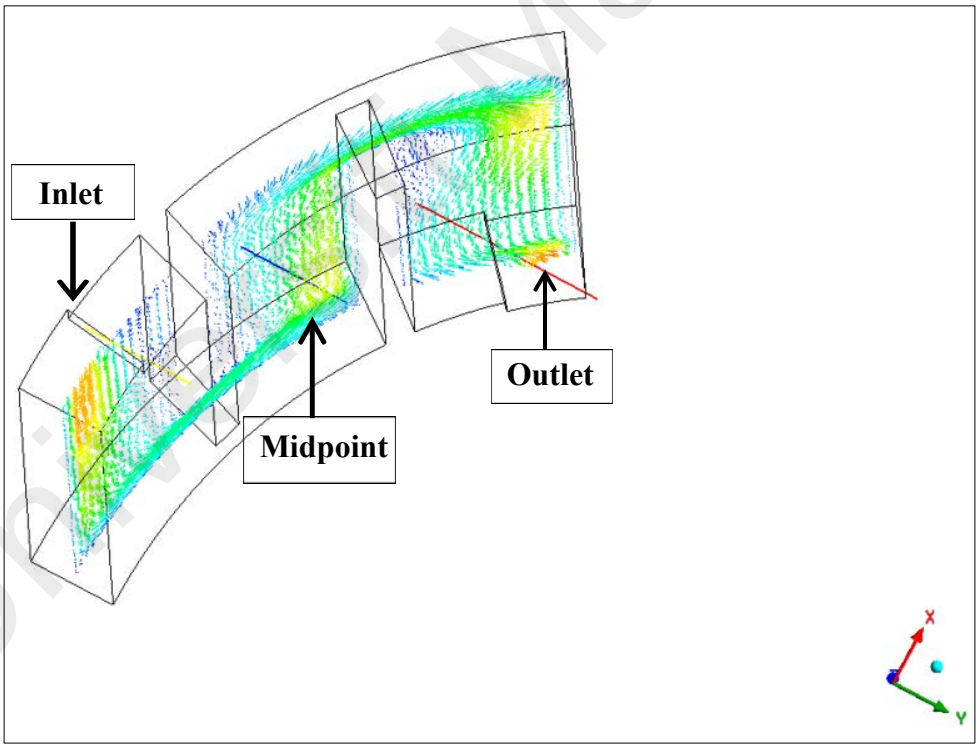

Figure 4.8: Datum Line representing Case 2 at Inlet, Midpoint, and Outlet of housing

4.2.1 Water

Figure 4.9 below shows the velocity vectors for Case 2 with water as the cooling medium. Here the three straight lines can be seen as the datum to represent the inlet, midpoint and the outlet of the housing in the discussion and analysis section. Velocity vector direction are also shown through the path as shown in this figure.

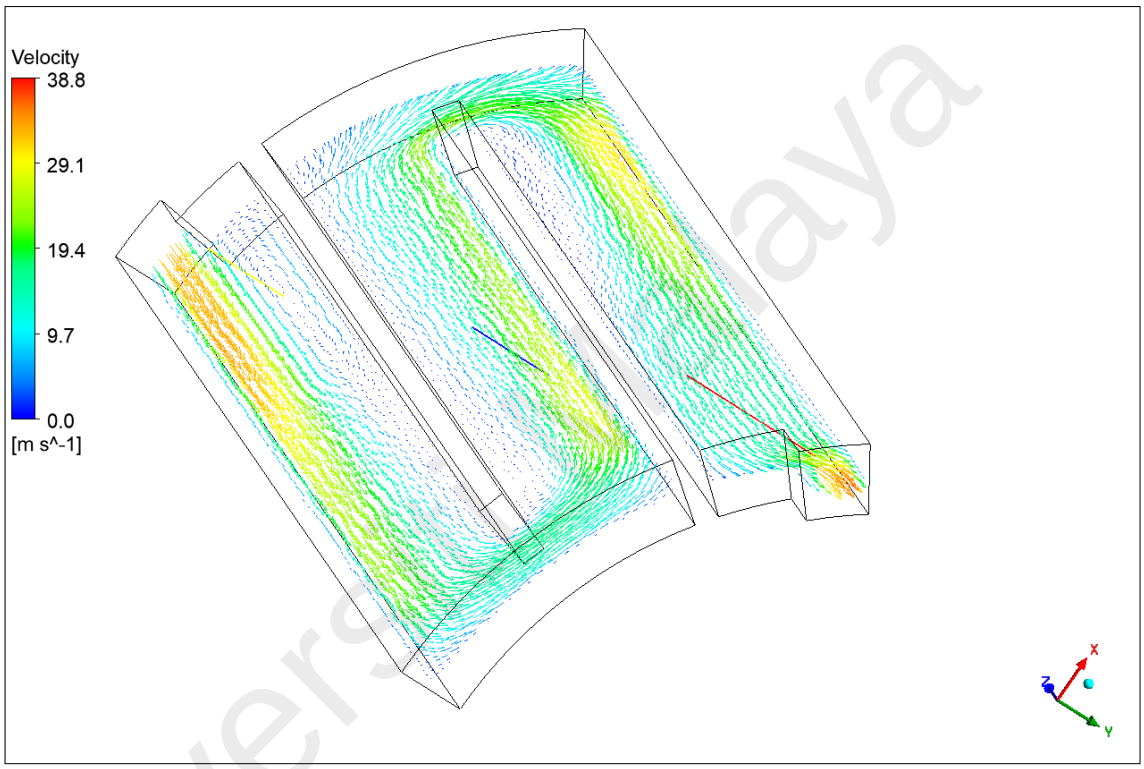

Figure 4.9: Velocity Vectors for Case 2 - Water

Figure 4.10, Figure 4.11 and Figure 4.12 below shows the graph plot of temperature profile from the inner housing going towards the outer housing in Y-axis of the coordinate as modelled in ANSYS. As explained in section 4.2, Figure 4.10 will be the temperature profile for the inlet of the housing, Figure 4.11 will be the temperature of the midpoint of the housing while Figure 4.12 is the temperature profile at the outlet of the housing.

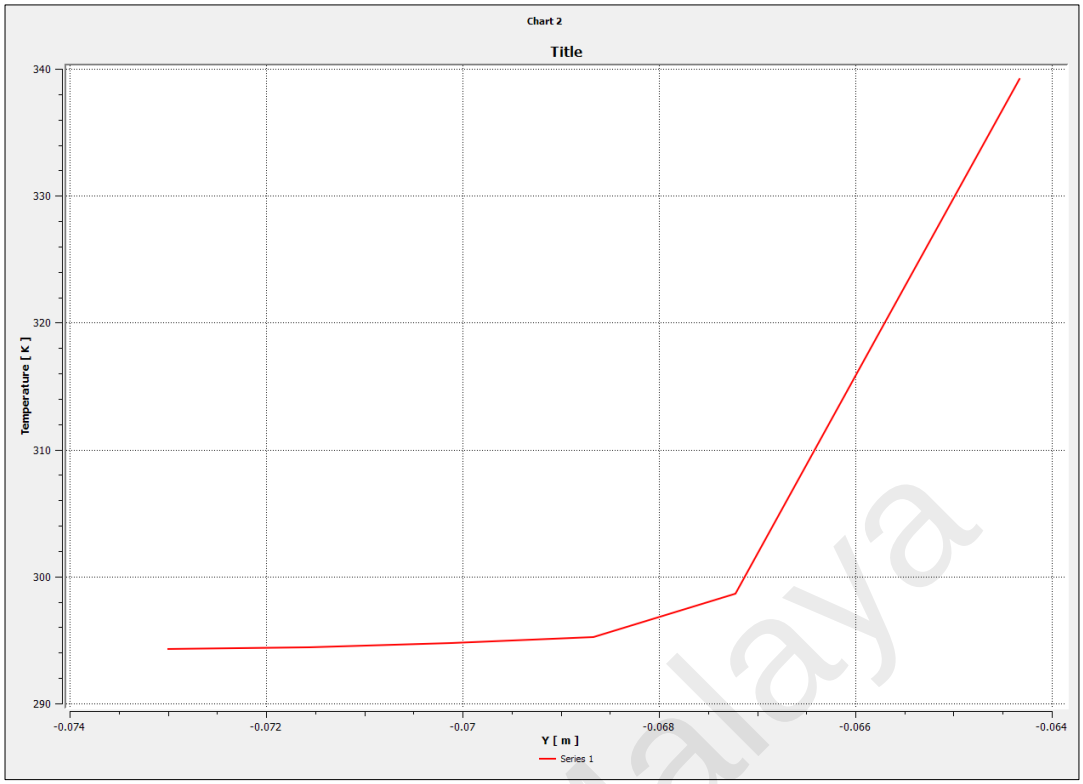

Figure 4.10: Temperature profile at Inlet for Case 2– Water

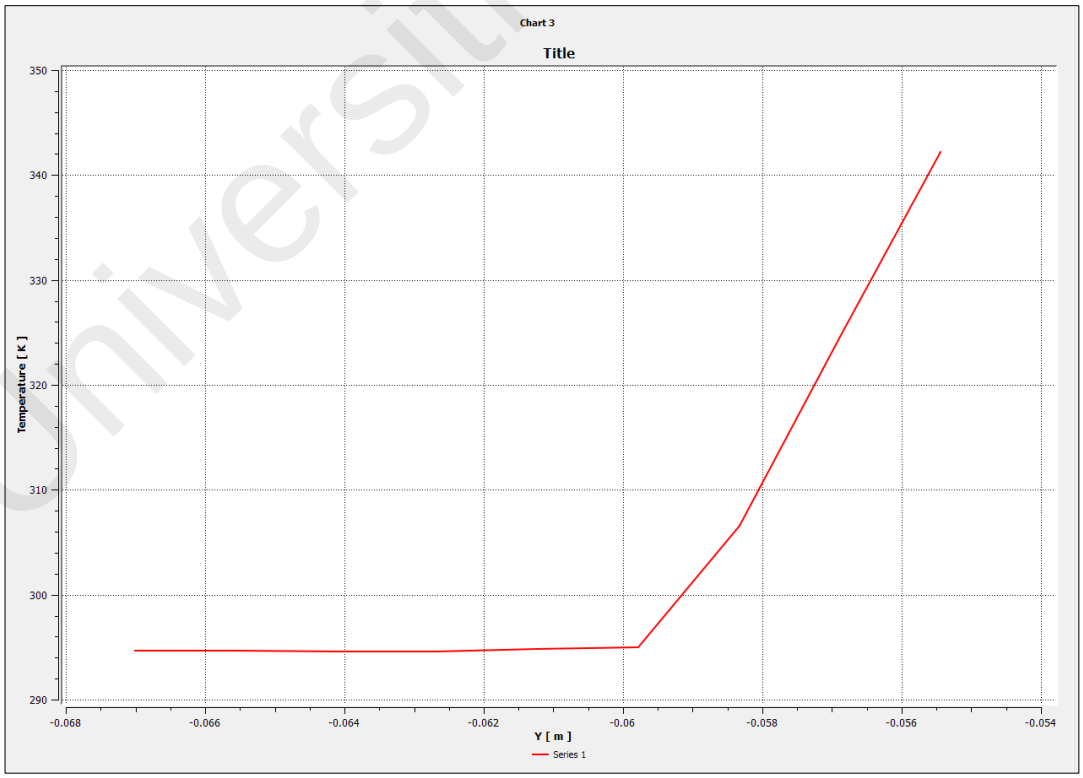

Figure 4.11: Temperature profile at Midpoint for Case 2 – Water

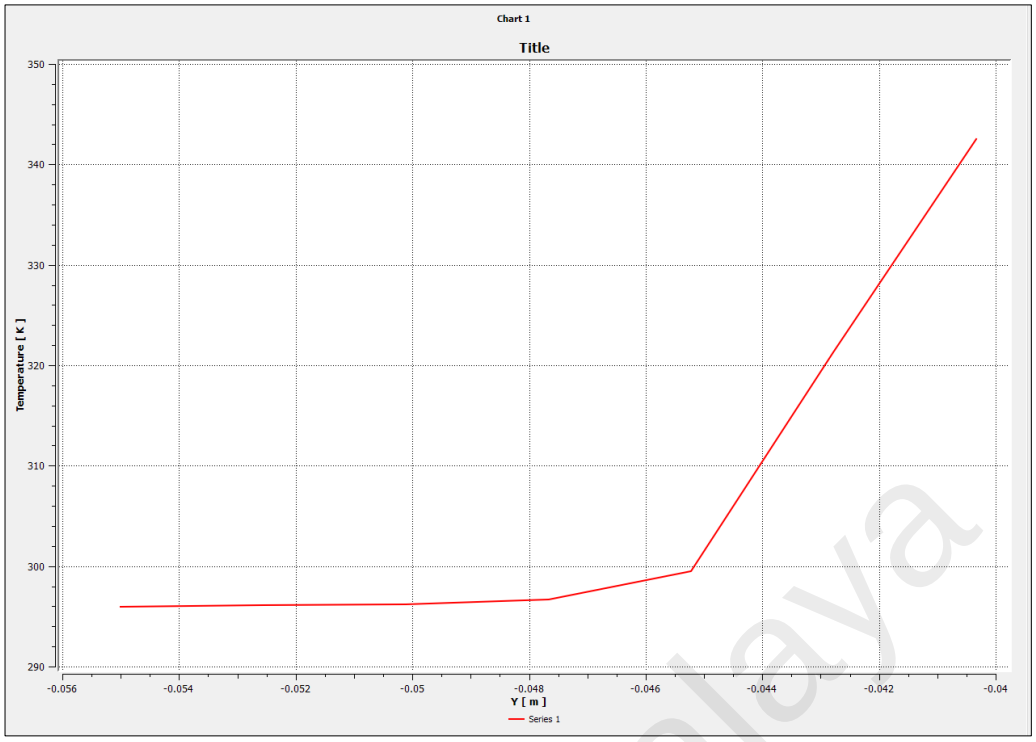

Figure 4.12: Temperature profile at Outlet for Case 2 – Water

4.2.2 Oil

Figure 4.13 below shows the velocity vectors for Case 2 with oil as the cooling medium. Here the three straight lines can be seen as the datum to represent the inlet, midpoint and the outlet of the housing in the discussion and analysis section. Velocity vector direction are also shown through the path as shown in this figure.

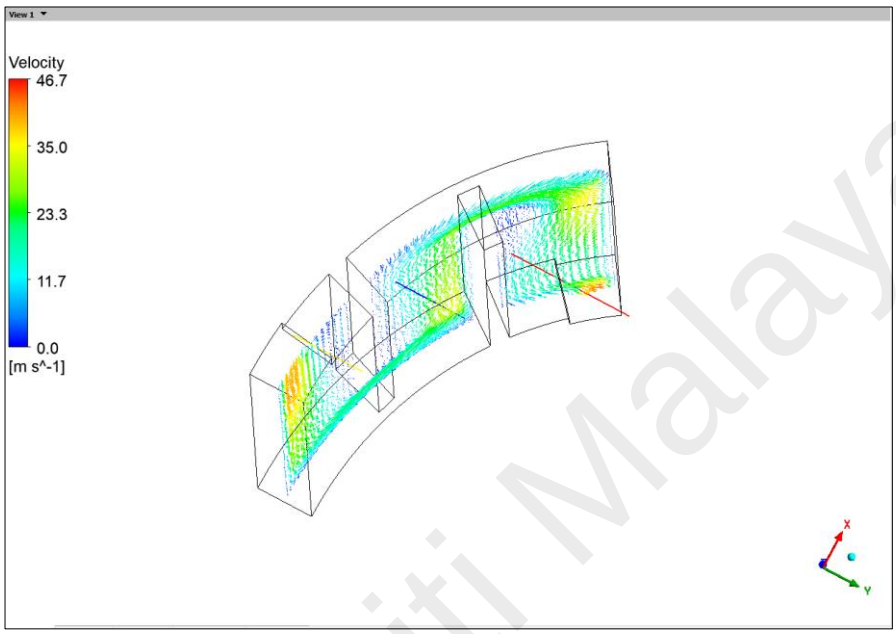

Figure 4.13: Velocity Vectors for Case 2 - Oil

Figure 4.14, Figure 4.15 and Figure 4.16 below shows the graph plot of temperature profile from the inner housing going towards the outer housing in Y-axis of the coordinate as modelled in ANSYS. As explained in section 4.2, Figure 4.14 will be the temperature profile for the inlet of the housing, Figure 4.15 will be the temperature of the midpoint of the housing while Figure 4.16 is the temperature profile at the outlet of the housing.

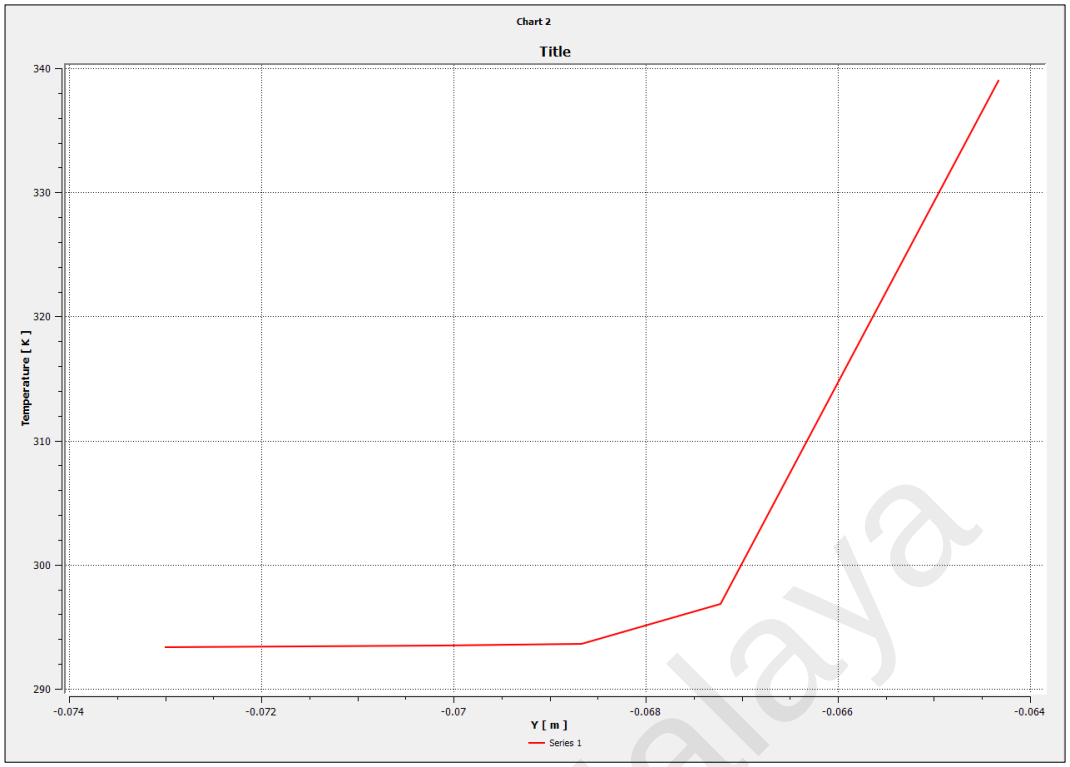

Figure 4.14: Temperature profile at Inlet for Case 2 – Oil

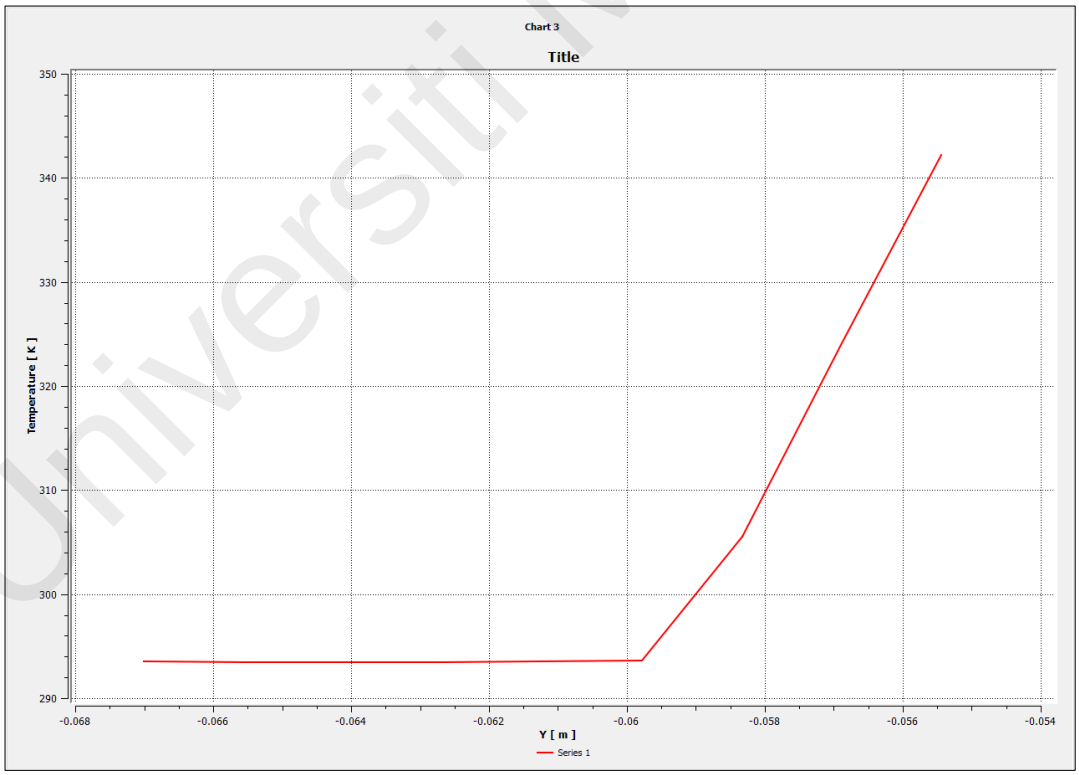

Figure 4.15: Temperature profile at Midpoint for Case 2 – Oil

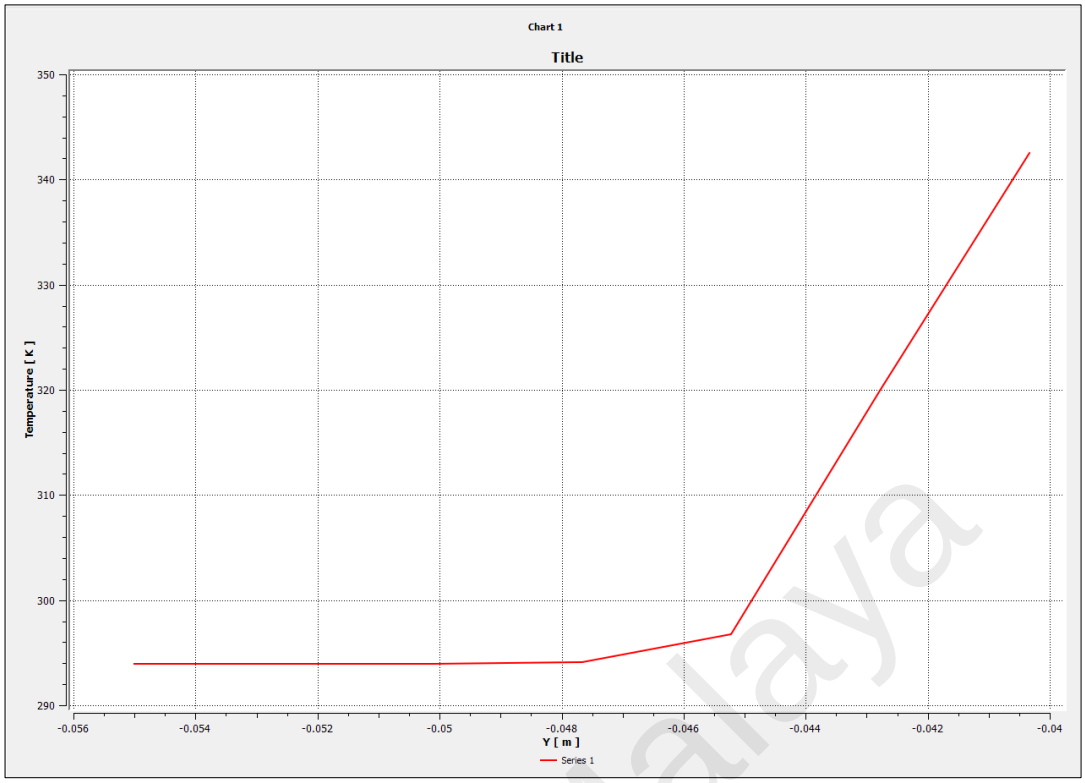

Figure 4.16: Temperature profile at Outlet for Case 2 – Oil

4.3 Discussions

From the presentation of the results in Section 4.1 and Section 4.2 for Case 1 and Case 2 respectively, in this section, the data will analyze the findings comprehensively on case by case basis. Relationship and comparative analysis will be used in this section,

For case 1, water and oil will be compared and the same analysis will be done for case 2 where water and oil will be compared.

4.3.1 Case 1 – Water & Oil

From Figure 4.3 and Figure 4.4 graph plot, the value of inner housing temperature, and the outer housing temperature is tabulated in Table 4.1 below for the water while Figure 4.6 and Figure 4.7 is shown in the oil section. In addition to that, a steady temperature data is also included to analyze the location at what point and at which temperature the temperature achieves a steady value which is almost equivalent to the outer housing temperature. All this data is presented as per the datum coordinate chosen in section 4.1 at inlet and outlet of the housing for comparison in Figure 4.1.

Table 4.1: Case 1 housing temperature –Water & Oil

Case 1	Location	Inner Housing Temperature (K)	Steady temperature (K)	Outer housing Temperature (K)
Water	Inlet	333	300 (at 0.0628)	299.9
	Outlet	333	297 (at 0.0628)	296.5
Oil	Inlet	333	295 (at 0.0628)	295
	Outlet	333	294.2 (at 0.0628)	294

As can be seen in table 4.1, Oil as coolant achieves better cooling where both temperature at its' inlet and outlet achieve lower temperature of 295 K and 294 K respectively as compared to water where the outer housing temperature achieves 299.9 K and 296.5 K respectively at both inlet and outlet location. This proof that the numerical simulation highest probability to agree with the wide use of oil as a more effective coolant for electrical motors.

While for the steady temperature, where the temperature of which it starts to reach a steady temperature in achieving the final cooled temperature is observed at the same point for both water and oil case. A point to note is that the steady temperature is very close to the final outer housing temperature for both case. This is an important finding especially in helping designers to optimize the housing design for modification.

To further analyze, table 4.1(a) below simplifies the Case 1 result in order to gain better perspective in terms of cooling effect. The temperature difference between inner housing and outer housing shows a better cooling effect when oil is used as the coolant. When looking at the temperature difference, oil has better cooling stability where both inlet and outlet has almost the same cooling effect where the temperature difference is about the same at 38 degree Celcius and 39 degree Celcius respectively. While water cooling shows an increased of 3.4 degree Celcius in cooling at the outlet as compared to the inlet.

Table 4.1: (a) Case 1 housing temperature difference – Water & Oil

Case 1	Location	Temperature difference (degree Celcius)
Water	Inlet	33.1
	Outlet	36.5
Oil	Inlet	38
	Outlet	39

4.3.2 Case 2 – Water & Oil

From Figure 4.10, Figure 4.11, and Figure 4.12 graph plot, the value of inner housing temperature, and the outer housing temperature is tabulated in Table 4.2 below for the water while Figure 4.14, Figure 4.15, and Figure 4.16 is shown in the oil section. An important finding found in case 2, is that the steady temperature data is also included to analyze the location at what point and at which temperature the temperature achieves a steady value which is almost equivalent to the outer housing temperature and a point to note that this section will only look at the steady temperature achieved in a comparative manner where it settles earliest as compared to the other points. All this data is presented as per the datum coordinate chosen in section 4.2 at inlet, midpoint, and outlet of the housing for comparison as shown in Figure 4.8.

Table 4.2: Case 2 housing temperature –Water & Oil

Case 2	Location	Inner Housing Temperature (K)	Steady temperature (K)	Outer housing Temperature (K)
Water	Inlet	339	-	294
	Midpoint	342	Settle earliest	294
	Outlet	342	-	296
Oil	Inlet	339	-	293.5
	Midpoint	342	Settle earliest	294
	Outlet	342	-	294

As tabulated in table 4.2, Water and Oil as coolant achieves similar cooling temperature at inlet and midpoint of the Case 2 housing which are 294 K and 293.5 K respectively for the water inlet and oil inlet while temperature of 294 K was achieved for both water and oil at midpoint. While the difference is observed only at the outlet of the housing where Water outlet at outer housing temperature has higher temperature of 296 K while oil outlet outer housing temperature has temperature of 294 K. This will conclude that the Oil as coolant has better cooling effect only at the outlet of the motor housing.

An interesting finding is how water in this unique pattern of Case 2 could achieve an almost similar cooling effect as compared to oil at the midpoint of the housing design.

To further analyze the cooling effect, table 4.2 (b) below simplifies Case 2 result to focus on the cooling effect in order to gain better perspective. The temperature difference between inner and outer housing shows a better cooling effect at inlet and midpoint when water is used as the coolent while the oil has some interesting observation where the cooling is has similar temperature difference of 48 degree celcius compare to water but at midpoint and outlet of the housing. Another comparison observed is that, water has a slightly better cooling at outlet which is comparable to the oil at inlet at about 46 degree Celcius and 45.5 degree Celcius respectively.

Table 4.2: (a) Case 2 housing temperature difference – Water & Oil

Case 2	Location	Temperature difference (degree Celcius)
Water	Inlet	48
	Midpoint	48
	Outlet	46
Oil	Inlet	45.5
	Midpoint	48
	Outlet	48

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The realms of possibility to achieve better cooling for Case 1 suggests oil is a better option than water. However, in Case 2, the manipulation of motor housing of the coolant path itself influence the cooling effect and suggests the same cooling effect can be achieved at midpoint of the housing coolant path. Although the outlet of Case 2 suggests a lesser cooling effect, this finding where the improved housing coolant path opens the possibility of further study towards a better understanding of the characteristics of the cooling effect and finally optimize by saving on oil consumption whilst optimizing the pattern of the coolant path.

This findings is important where the change of housing design suggests water cooling is as competitive as oil cooling where it could achieve better performance than oil. In real application, water would be an easier option as far as maintenance is concern which could benefit the user. In addition to that, water is much cheaper than oil and easily available and accessible without the need to purchase specific cooling medium specification for cooling. This information found in this research project is interesting and could help in strengthening water as a cooling medium in the IPM application.

5.2 Recommendations

While many factors are clear in the numerical studies results as presented in this Computational Fluid Dynamics (CFD) studies, there are few areas of improvement that can be done for future research.

First, the technicalities of the study can improve by modelling an analytical solution by using software such as MATLAB in order to find a specific mathematical correlation for specific unique design of the motor housing. In addition to that, the study could also improve by adding an additional "zig zag" portion from Case 2 to study the cooling effect and its' temperature characteristics at each point on top of the current study inlet, midpoint, and outlet investigated in this study. Furthermore, coolant velocity could also be manipulated to study the characteristics of the temperature profile and determine the cooling effect outcome at the motor housing outer temperature.

Further from the numerical studies itself, an improved study model can be done in order to get a more cost effective experimental studies that could reduce cost while further optimization can be done in the design optimization of the CFD model with reduced cost.

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APPENDIX A – CASE 1 ANSYS SETUP, ITERATION, AND RESIDUALS FOR WATER

ANSYS Setup – Water (Case 1)

3882 hexahedral cells, zone 4, binary.
3882 cell partition ids, zone 4, 7 partitions, binary.
10094 quadrilateral interior faces, zone 1, binary.
1792 quadrilateral wall faces, zone 5, binary.
9 quadrilateral velocity-inlet faces, zone 6, binary.
9 quadrilateral pressure-outlet faces, zone 7, binary.
1294 quadrilateral wall faces, zone 8, binary.
5524 nodes, binary.
5524 node flags, binary.

Building...
mesh
distributing mesh
parts.....,
faces.....,
nodes.....,
cells.....,
bandwidth reduction using Reverse Cuthill-McKee: 93/41 = 2.26829
materials,
interface,
domains,
mixture
zones,
heat
outlet
inlet
wall-fluid
interior-fluid
fluidSetting fluid (mixture) ... Done.
Setting zone id of fluid to 4.
Setting zone id of interior-fluid to 1.
Setting zone id of wall-fluid to 5.
Setting zone id of inlet to 6.
Setting zone id of outlet to 7.
Setting zone id of heat to 8.
Done.
Setting fluid (mixture) ... Done.
Setting inlet (mixture) (zone type changed to mass-flow-inlet) ... Done.
Setting interior-fluid (mixture) ... Done.
Setting wall-fluid (mixture) ... Done.
Setting outlet (mixture) ... Done.
Setting heat (mixture) ... Done.

parallel,
Done.

Preparing mesh for display...
Done.

Setting Post Processing and Surfaces information ... Done.
Information: Converting parameter Tf to report definition.
Information: Converting parameter Tout to report definition.
Information: Converting parameter Vout to report definition.
Information: Converting parameter Pd to report definition.

ANSYS Iteration – Water (Case 1)

writing rp variables ... Done.
writing domain variables ... Done.
writing fluid (type fluid) (mixture) ... Done.
writing inlet (type mass-flow-inlet) (mixture) ... Done.
writing interior-fluid (type interior) (mixture) ... Done.
writing wall-fluid (type wall) (mixture) ... Done.
writing outlet (type pressure-outlet) (mixture) ... Done.
writing heat (type wall) (mixture) ... Done.
writing zones map name-id ... Done.

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1 1.0000e+00 8.1665e-08 1.2923e-07 7.1380e-04 1.0001e-04 6.4451e-01 6.8411e-01 0:00:00 1999
2 1.0000e+00 2.1388e-01 7.7440e-02 2.4460e+00 3.2901e-04 3.7150e-01 5.8032e-01 0:33:18 1998

Reversed flow on 1 face (10.6% area) of pressure-outlet 7.
3 3.3218e-01 4.9624e-02 1.6735e-02 2.5011e-01 4.4652e-03 2.1359e-01 1.6242e+00 0:26:38 1997
4 1.8993e-01 5.7844e-02 3.3685e-02 3.0120e-01 3.0643e-03 1.7719e-01 1.4360e+00 0:21:17 1996
5 1.3101e-01 5.1186e-02 4.5636e-02 2.4750e-01 1.1992e-03 1.6897e-01 7.7030e-01 0:17:01 1995
6 1.3468e-01 5.3342e-02 3.3414e-02 1.6614e-01 6.1079e-04 1.4766e-01 4.1474e-01 0:13:37 1994
7 1.1988e-01 5.4885e-02 3.5829e-02 1.0711e-01 3.2499e-04 1.1816e-01 2.5245e-01 0:10:53 1993
8 9.4319e-02 4.8112e-02 3.2124e-02 7.2716e-02 2.2623e-04 8.3096e-02 1.7253e-01 0:08:42 1992
9 7.2888e-02 4.2019e-02 2.4959e-02 5.5695e-02 1.7485e-04 6.2540e-02 1.3762e-01 0:06:58 1991
10 5.5766e-02 3.5889e-02 2.2157e-02 4.6667e-02 1.5005e-04 5.6442e-02 1.2699e-01 0:05:34 1990
11 4.6874e-02 3.2105e-02 1.9343e-02 4.2944e-02 1.3722e-04 5.4473e-02 1.2375e-01 0:04:27 1989

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
12 3.9226e-02 3.0420e-02 1.7395e-02 3.8689e-02 1.2583e-04 5.5107e-02 1.2402e-01 0:03:33 1988

13 3.6248e-02 2.9396e-02 1.6003e-02 3.5217e-02 1.2108e-04 5.5373e-02 1.2307e-01 0:02:51 1987
14 3.3877e-02 2.7437e-02 1.4894e-02 3.1549e-02 1.1810e-04 5.6012e-02 1.2559e-01 0:02:16 1986
15 3.0806e-02 2.5024e-02 1.3608e-02 2.8931e-02 1.0913e-04 5.6736e-02 1.3331e-01 0:01:49 1985
16 2.8426e-02 2.2998e-02 1.2630e-02 2.6783e-02 1.0312e-04 5.6414e-02 1.3329e-01 0:01:27 1984
17 2.5845e-02 2.1221e-02 1.1796e-02 2.5607e-02 9.6659e-05 5.6200e-02 1.3138e-01 0:01:10 1983
18 2.4606e-02 1.9696e-02 1.1419e-02 2.3955e-02 9.1480e-05 5.5341e-02 1.2620e-01 0:00:56 1982
19 2.2880e-02 1.7905e-02 1.0789e-02 2.2366e-02 8.6822e-05 5.3822e-02 1.1850e-01 0:00:45 1981

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
20 2.0314e-02 1.6504e-02 1.0086e-02 2.0814e-02 7.5856e-05 5.1301e-02 1.0948e-01 0:00:36 1980

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
21 1.8333e-02 1.5113e-02 9.1451e-03 1.9563e-02 6.9463e-05 4.9083e-02 1.0184e-01 0:00:29 1979

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
22 1.6344e-02 1.3660e-02 8.3510e-03 1.8850e-02 6.4073e-05 4.7049e-02 9.6106e-02 0:00:23 1978

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
23 1.4297e-02 1.2151e-02 7.6176e-03 1.8035e-02 5.9579e-05 4.6440e-02 9.7044e-02 0:06:54 1977

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
24 1.2324e-02 1.0832e-02 6.7047e-03 1.6959e-02 5.6874e-05 4.6760e-02 9.9103e-02 0:05:31 1976

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
25 1.0834e-02 9.8173e-03 6.1320e-03 1.5687e-02 5.3544e-05 4.6797e-02 9.7653e-02 0:04:24 1975

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
26 1.0110e-02 9.2306e-03 5.9254e-03 1.4607e-02 5.2304e-05 4.5727e-02 9.3115e-02 0:03:31 1974

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
27 1.0048e-02 8.6264e-03 5.7486e-03 1.3800e-02 4.9139e-05 4.3340e-02 8.5271e-02 0:02:49 1973

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
28 8.7435e-03 7.8842e-03 5.4890e-03 1.3177e-02 4.7347e-05 4.1210e-02 7.9326e-02 0:02:15 1972

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
29 8.4588e-03 7.3347e-03 5.1631e-03 1.2621e-02 4.5848e-05 3.9539e-02 7.6059e-02 0:01:48 1971

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
30 7.4701e-03 6.9458e-03 4.7567e-03 1.2075e-02 4.3908e-05 3.7784e-02 7.2505e-02 0:01:26 1970

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
31 6.6285e-03 6.6012e-03 4.5160e-03 1.1389e-02 4.1881e-05 3.6190e-02 6.9414e-02 0:01:09 1969

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
32 5.9174e-03 6.2673e-03 4.2306e-03 1.0718e-02 4.1561e-05 3.4676e-02 6.6821e-02 0:00:55 1968

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
33 5.3769e-03 5.8906e-03 3.9183e-03 1.0065e-02 4.0856e-05 3.3562e-02 6.5076e-02 0:00:44 1967

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
34 4.8397e-03 5.5650e-03 3.5949e-03 9.5709e-03 3.9987e-05 3.2677e-02 6.3730e-02 0:00:35 1966

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
35 4.4409e-03 5.2391e-03 3.3643e-03 9.1126e-03 3.9185e-05 3.2001e-02 6.2833e-02 0:00:28 1965

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
36 4.2723e-03 4.9626e-03 3.1639e-03 8.7805e-03 3.9027e-05 3.1590e-02 6.2329e-02 0:00:23 1964
37 4.2100e-03 4.7339e-03 3.0636e-03 8.4796e-03 3.6942e-05 3.1379e-02 6.2119e-02 0:00:18 1963
38 4.1083e-03 4.5583e-03 3.0207e-03 8.2601e-03 3.4362e-05 3.1309e-02 6.2038e-02 0:00:14 1962
39 4.0253e-03 4.3471e-03 2.9374e-03 8.0128e-03 3.2034e-05 3.1213e-02 6.1968e-02 0:00:12 1961
40 4.0217e-03 4.1069e-03 2.8508e-03 7.7354e-03 3.0976e-05 3.0861e-02 6.1156e-02 0:00:09 1960
41 4.0818e-03 3.9138e-03 2.7836e-03 7.4667e-03 2.9995e-05 3.0125e-02 5.9354e-02 0:00:07 1959
42 4.1879e-03 3.7308e-03 2.7058e-03 7.2577e-03 2.9371e-05 2.8986e-02 5.6793e-02 0:00:06 1958
43 4.3914e-03 3.5893e-03 2.6427e-03 7.0707e-03 2.8782e-05 2.7624e-02 5.4056e-02 0:00:05 1957
44 4.5129e-03 3.4788e-03 2.6394e-03 6.9144e-03 2.7970e-05 2.6156e-02 5.1335e-02 0:00:04 1956

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

45 4.8301e-03 3.3497e-03 2.6583e-03 6.7769e-03 2.7459e-05 2.4741e-02 4.8795e-02 0:00:03 1955
46 4.6426e-03 3.3451e-03 2.6892e-03 6.5652e-03 2.7287e-05 2.3534e-02 4.7000e-02 0:06:33 1954
47 4.9354e-03 3.2588e-03 2.7148e-03 6.3637e-03 2.7339e-05 2.2805e-02 4.6011e-02 0:05:14 1953
48 4.5864e-03 3.2672e-03 2.7540e-03 6.1265e-03 2.7529e-05 2.2225e-02 4.5011e-02 0:04:11 1952
49 4.8413e-03 3.1793e-03 2.7276e-03 5.9175e-03 2.7589e-05 2.1436e-02 4.3782e-02 0:03:21 1951
50 4.5152e-03 3.1807e-03 2.7341e-03 5.6787e-03 2.7772e-05 2.0536e-02 4.1776e-02 0:02:41 1950
51 4.6436e-03 3.0714e-03 2.6720e-03 5.4701e-03 2.7918e-05 1.9675e-02 3.9960e-02 0:02:09 1949
52 4.2456e-03 3.0368e-03 2.6060e-03 5.2478e-03 2.7951e-05 1.8886e-02 3.8194e-02 0:01:43 1948
53 4.4067e-03 2.9458e-03 2.5664e-03 5.1088e-03 2.8075e-05 1.8170e-02 3.6491e-02 0:01:22 1947
54 4.1252e-03 2.8844e-03 2.5082e-03 4.9681e-03 2.8829e-05 1.7419e-02 3.4876e-02 0:01:06 1946
55 4.0632e-03 2.8295e-03 2.4540e-03 4.8415e-03 2.9813e-05 1.6389e-02 3.2670e-02 0:00:53 1945

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
56 3.8987e-03 2.7577e-03 2.3355e-03 4.7260e-03 2.9601e-05 1.5227e-02 2.9557e-02 0:00:42 1944
57 3.8169e-03 2.7091e-03 2.2787e-03 4.6128e-03 2.9521e-05 1.4099e-02 2.6568e-02 0:00:34 1943
58 3.7526e-03 2.6659e-03 2.2478e-03 4.5180e-03 2.8948e-05 1.2963e-02 2.3548e-02 0:00:27 1942
59 3.7437e-03 2.6306e-03 2.2271e-03 4.4481e-03 2.7922e-05 1.1804e-02 2.0706e-02 0:00:21 1941
60 3.7506e-03 2.6085e-03 2.2079e-03 4.3458e-03 2.5608e-05 1.0730e-02 1.8284e-02 0:00:17 1940
61 3.7195e-03 2.5817e-03 2.1639e-03 4.2401e-03 2.3816e-05 9.7433e-03 1.6259e-02 0:00:14 1939
62 3.7102e-03 2.5560e-03 2.1240e-03 4.1384e-03 2.2529e-05 8.9289e-03 1.4807e-02 0:00:11 1938
63 3.6667e-03 2.5172e-03 2.0893e-03 4.0618e-03 2.1403e-05 8.3067e-03 1.3918e-02 0:00:09 1937
64 3.5956e-03 2.4718e-03 2.0523e-03 3.9946e-03 2.0443e-05 7.8965e-03 1.3413e-02 0:00:07 1936
65 3.4661e-03 2.3919e-03 1.9970e-03 3.9717e-03 1.9556e-05 7.5593e-03 1.2821e-02 0:00:06 1935
66 3.4095e-03 2.3301e-03 1.9325e-03 3.9118e-03 1.8892e-05 7.3160e-03 1.2319e-02 0:00:04 1934

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
67 3.3679e-03 2.2732e-03 1.8673e-03 3.8689e-03 1.8816e-05 7.1410e-03 1.1792e-02 0:00:04 1933

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
68 3.3397e-03 2.2132e-03 1.8018e-03 3.8465e-03 1.8484e-05 7.1225e-03 1.1522e-02 0:00:03 1932

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
69 3.3561e-03 2.1560e-03 1.7416e-03 3.8711e-03 1.8446e-05 7.2740e-03 1.1478e-02 0:06:28 1931

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
70 3.3798e-03 2.1162e-03 1.6963e-03 3.8676e-03 1.9045e-05 7.5609e-03 1.1965e-02 0:05:11 1930

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
71 3.3678e-03 2.0744e-03 1.6602e-03 3.8648e-03 1.8971e-05 7.9574e-03 1.2826e-02 0:04:08 1929

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
72 3.4014e-03 2.0534e-03 1.6276e-03 3.9018e-03 1.9303e-05 8.5045e-03 1.4215e-02 0:03:19 1928

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
73 3.4629e-03 2.0299e-03 1.5875e-03 3.9618e-03 1.9682e-05 9.0708e-03 1.5591e-02 0:02:39 1927

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
74 3.4407e-03 2.0215e-03 1.5660e-03 3.9973e-03 2.0222e-05 9.5719e-03 1.6815e-02 0:02:07 1926

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
75 3.4301e-03 2.0303e-03 1.5567e-03 4.0475e-03 2.0761e-05 1.0027e-02 1.7943e-02 0:01:42 1925

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
76 3.4358e-03 2.0515e-03 1.5568e-03 4.0996e-03 2.1353e-05 1.0424e-02 1.8968e-02 0:01:21 1924

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
77 3.4354e-03 2.1021e-03 1.5728e-03 4.1292e-03 2.2515e-05 1.0674e-02 1.9700e-02 0:01:05 1923

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
78 3.4096e-03 2.1766e-03 1.5972e-03 4.1442e-03 2.3114e-05 1.0879e-02 2.0306e-02 0:00:52 1922

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
79 3.3991e-03 2.2576e-03 1.6352e-03 4.1485e-03 2.3710e-05 1.1052e-02 2.0845e-02 0:00:41 1921

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.

80 3.3892e-03 2.3292e-03 1.6816e-03 4.1504e-03 2.4173e-05 1.1283e-02 2.1438e-02 0:00:33 1920

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
81 3.4142e-03 2.4031e-03 1.7315e-03 4.1648e-03 2.4378e-05 1.1499e-02 2.1939e-02 0:00:27 1919

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
82 3.4226e-03 2.4712e-03 1.7512e-03 4.1477e-03 2.4707e-05 1.1713e-02 2.2241e-02 0:00:21 1918

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
83 3.4379e-03 2.5397e-03 1.7772e-03 4.1390e-03 2.5143e-05 1.1868e-02 2.2402e-02 0:00:17 1917

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
84 3.4628e-03 2.6177e-03 1.8075e-03 4.1376e-03 2.5341e-05 1.1887e-02 2.2289e-02 0:00:14 1916

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
85 3.4649e-03 2.6929e-03 1.8383e-03 4.1352e-03 2.5740e-05 1.1956e-02 2.2239e-02 0:00:11 1915

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
86 3.4514e-03 2.7783e-03 1.8670e-03 4.1106e-03 2.5872e-05 1.1830e-02 2.2068e-02 0:00:09 1914

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
87 3.5220e-03 2.8565e-03 1.8998e-03 4.0801e-03 2.5847e-05 1.1711e-02 2.1941e-02 0:00:07 1913

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
88 3.6008e-03 2.9083e-03 1.9264e-03 4.0157e-03 2.5938e-05 1.1545e-02 2.1652e-02 0:00:06 1912

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
89 3.6868e-03 2.9672e-03 1.9611e-03 3.9539e-03 2.5992e-05 1.1376e-02 2.1384e-02 0:00:04 1911

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
90 3.7583e-03 2.9995e-03 1.9823e-03 3.8836e-03 2.6017e-05 1.1222e-02 2.1236e-02 0:00:04 1910

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
91 3.8273e-03 3.0189e-03 1.9840e-03 3.8167e-03 2.5783e-05 1.1072e-02 2.1111e-02 0:00:03 1909

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
92 3.8925e-03 3.0199e-03 1.9904e-03 3.7309e-03 2.5863e-05 1.0887e-02 2.0798e-02 0:00:02 1908

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
93 4.0838e-03 2.9886e-03 1.9862e-03 3.6328e-03 2.5450e-05 1.0750e-02 2.0568e-02 0:00:02 1907

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
94 3.9041e-03 2.9699e-03 1.9681e-03 3.5305e-03 2.5862e-05 1.0673e-02 2.0384e-02 0:00:01 1906

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
95 4.0272e-03 2.9255e-03 1.9590e-03 3.4240e-03 2.5420e-05 1.0551e-02 2.0213e-02 0:06:22 1905

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
96 3.8197e-03 2.8594e-03 1.9293e-03 3.3432e-03 2.5532e-05 1.0434e-02 1.9890e-02 0:05:06 1904

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
97 3.9117e-03 2.7753e-03 1.9025e-03 3.2400e-03 2.5311e-05 1.0223e-02 1.9475e-02 0:04:04 1903

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
98 3.8570e-03 2.6826e-03 1.8550e-03 3.1479e-03 2.4975e-05 9.9559e-03 1.8756e-02 0:03:15 1902

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
99 3.7705e-03 2.5745e-03 1.8043e-03 3.1109e-03 2.4701e-05 9.6898e-03 1.7880e-02 0:02:36 1901

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
100 3.7060e-03 2.4763e-03 1.7762e-03 3.0808e-03 2.4109e-05 9.5251e-03 1.7554e-02 0:02:05 1900

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
101 3.6360e-03 2.4044e-03 1.7710e-03 3.0931e-03 2.4361e-05 9.3585e-03 1.7013e-02 0:01:40 1899
102 3.5950e-03 2.3781e-03 1.7965e-03 3.1505e-03 2.3081e-05 9.0510e-03 1.6166e-02 0:01:20 1898
103 3.6673e-03 2.3920e-03 1.8484e-03 3.2401e-03 2.3271e-05 9.0516e-03 1.6161e-02 0:01:04 1897
104 3.7902e-03 2.4419e-03 1.8735e-03 3.3151e-03 2.3713e-05 9.1282e-03 1.6769e-02 0:00:51 1896
105 3.6500e-03 2.5288e-03 1.8657e-03 3.3964e-03 2.5143e-05 9.3543e-03 1.7103e-02 0:00:41 1895
106 3.8929e-03 2.5777e-03 1.8427e-03 3.4950e-03 2.6239e-05 9.7577e-03 1.8054e-02 0:00:33 1894
107 3.7040e-03 2.6846e-03 1.8301e-03 3.6195e-03 2.8331e-05 1.0389e-02 1.9247e-02 0:00:26 1893
108 3.7156e-03 2.7445e-03 1.8174e-03 3.7474e-03 3.0067e-05 1.0986e-02 2.0304e-02 0:00:21 1892

109 3.6979e-03 2.7715e-03 1.7840e-03 3.8684e-03 3.1337e-05 1.1402e-02 2.0680e-02 0:00:17 1891
110 3.6334e-03 2.7653e-03 1.7548e-03 3.9622e-03 3.2438e-05 1.1677e-02 2.0553e-02 0:00:13 1890

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
111 3.5038e-03 2.7384e-03 1.7382e-03 4.0166e-03 3.2736e-05 1.1575e-02 1.9648e-02 0:00:11 1889
112 3.3695e-03 2.7002e-03 1.7264e-03 4.0761e-03 3.2805e-05 1.1254e-02 1.8212e-02 0:00:09 1888
113 3.3192e-03 2.6692e-03 1.7174e-03 4.1040e-03 3.2279e-05 1.0864e-02 1.6631e-02 0:00:07 1887
114 3.3797e-03 2.6631e-03 1.7186e-03 4.1422e-03 3.1255e-05 1.0416e-02 1.4921e-02 0:00:05 1886
115 3.4701e-03 2.6935e-03 1.7574e-03 4.1651e-03 3.0582e-05 9.9652e-03 1.3383e-02 0:00:04 1885
116 3.5015e-03 2.7712e-03 1.8294e-03 4.1756e-03 3.0204e-05 9.4604e-03 1.2161e-02 0:00:03 1884
117 3.5327e-03 2.8630e-03 1.8965e-03 4.1496e-03 3.0019e-05 9.0660e-03 1.1820e-02 0:00:03 1883
118 3.5236e-03 2.9458e-03 1.9412e-03 4.0662e-03 3.0232e-05 8.6196e-03 1.1342e-02 0:00:02 1882
119 3.5070e-03 2.9806e-03 1.9878e-03 3.9866e-03 3.0417e-05 8.1345e-03 1.0934e-02 0:06:18 1881
120 3.5181e-03 2.9662e-03 2.0085e-03 3.8965e-03 3.0441e-05 7.6721e-03 1.0341e-02 0:05:02 1880
121 3.5733e-03 2.9292e-03 2.0110e-03 3.8002e-03 3.0891e-05 7.2763e-03 9.7830e-03 0:04:02 1879

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
122 3.7307e-03 2.8650e-03 2.0138e-03 3.6887e-03 3.1261e-05 6.9955e-03 9.5814e-03 0:03:13 1878
123 3.8249e-03 2.8137e-03 2.0334e-03 3.5423e-03 3.1717e-05 6.6872e-03 9.1150e-03 0:02:34 1877
124 3.8346e-03 2.7281e-03 2.0232e-03 3.4186e-03 3.1949e-05 6.3847e-03 8.5436e-03 0:02:04 1876
125 3.8815e-03 2.6362e-03 1.9915e-03 3.2995e-03 3.1524e-05 6.1104e-03 7.8069e-03 0:01:39 1875
126 3.9024e-03 2.5434e-03 1.9304e-03 3.1401e-03 3.0559e-05 5.8209e-03 7.0983e-03 0:01:19 1874
127 3.8058e-03 2.4332e-03 1.8375e-03 3.0136e-03 2.8728e-05 5.6269e-03 6.8428e-03 0:01:03 1873
128 3.5988e-03 2.3252e-03 1.7424e-03 2.8786e-03 2.6356e-05 5.4713e-03 7.0255e-03 0:00:50 1872
129 3.4323e-03 2.2181e-03 1.6395e-03 2.7527e-03 2.4080e-05 5.3672e-03 7.2575e-03 0:00:40 1871
130 3.2207e-03 2.0796e-03 1.5390e-03 2.6102e-03 2.2139e-05 5.2676e-03 7.3596e-03 0:00:32 1870
131 3.0878e-03 1.9584e-03 1.4451e-03 2.4826e-03 2.0334e-05 5.1162e-03 7.2888e-03 0:00:26 1869
132 2.9783e-03 1.8506e-03 1.3473e-03 2.3547e-03 1.8924e-05 5.0221e-03 7.2119e-03 0:00:21 1868

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
133 2.8472e-03 1.7488e-03 1.2684e-03 2.2449e-03 1.7258e-05 4.8720e-03 6.9139e-03 0:00:17 1867
134 2.7047e-03 1.6467e-03 1.2087e-03 2.1203e-03 1.5976e-05 4.5858e-03 6.2035e-03 0:00:13 1866
135 2.4717e-03 1.5182e-03 1.1467e-03 2.0041e-03 1.5006e-05 4.2785e-03 5.5291e-03 0:00:11 1865
136 2.2554e-03 1.3808e-03 1.0804e-03 1.8898e-03 1.4148e-05 4.1189e-03 5.3228e-03 0:00:08 1864
137 2.1195e-03 1.2518e-03 1.0126e-03 1.7746e-03 1.3695e-05 4.0183e-03 5.3210e-03 0:00:07 1863
138 2.1193e-03 1.1408e-03 9.4890e-04 1.6744e-03 1.2877e-05 3.9038e-03 5.2971e-03 0:00:05 1862
139 1.9400e-03 1.0262e-03 8.8149e-04 1.5933e-03 1.2182e-05 3.7620e-03 5.1129e-03 0:00:04 1861
140 1.7937e-03 9.2992e-04 8.2622e-04 1.5248e-03 1.1616e-05 3.5707e-03 4.8612e-03 0:00:03 1860
141 1.6698e-03 8.4754e-04 7.7751e-04 1.4755e-03 1.0934e-05 3.3712e-03 4.5426e-03 0:00:03 1859
142 1.5679e-03 7.6967e-04 7.2686e-04 1.4513e-03 1.0458e-05 3.2037e-03 4.2501e-03 0:00:02 1858
143 1.3920e-03 7.0860e-04 6.7872e-04 1.4688e-03 1.0175e-05 3.0679e-03 3.9743e-03 0:06:13 1857

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
144 1.4156e-03 6.6161e-04 6.4575e-04 1.4777e-03 9.9678e-06 2.9377e-03 3.6969e-03 0:04:58 1856
145 1.3103e-03 6.4850e-04 6.2307e-04 1.5066e-03 9.9867e-06 2.8273e-03 3.4232e-03 0:03:59 1855
146 1.3208e-03 6.4943e-04 6.0413e-04 1.5508e-03 1.0238e-05 2.7861e-03 3.3041e-03 0:03:11 1854
147 1.3493e-03 6.6628e-04 6.0214e-04 1.6219e-03 1.0789e-05 2.8174e-03 3.3538e-03 0:02:33 1853
148 1.4070e-03 7.1414e-04 6.1090e-04 1.7258e-03 1.1525e-05 2.8989e-03 3.5260e-03 0:02:02 1852
149 1.5230e-03 7.7140e-04 6.3203e-04 1.8384e-03 1.2264e-05 3.0077e-03 3.8523e-03 0:01:38 1851
150 1.6358e-03 8.3743e-04 6.6059e-04 1.9536e-03 1.2722e-05 3.1208e-03 4.2207e-03 0:01:18 1850
151 1.6904e-03 9.0083e-04 6.8526e-04 2.0849e-03 1.2911e-05 3.2794e-03 4.7582e-03 0:01:02 1849
152 1.7612e-03 9.6192e-04 7.0846e-04 2.1995e-03 1.3087e-05 3.4669e-03 5.3734e-03 0:00:50 1848
153 1.8067e-03 1.0269e-03 7.3206e-04 2.3174e-03 1.3358e-05 3.6385e-03 5.9330e-03 0:00:40 1847
154 1.8004e-03 1.0916e-03 7.5014e-04 2.4390e-03 1.4009e-05 3.7977e-03 6.3764e-03 0:00:32 1846

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
155 1.8682e-03 1.1533e-03 7.6888e-04 2.5471e-03 1.4992e-05 3.9035e-03 6.5960e-03 0:00:25 1845

156 1.9543e-03 1.2256e-03 7.9746e-04 2.6562e-03 1.5895e-05 3.9733e-03 6.5850e-03 0:00:20 1844
157 2.0426e-03 1.2930e-03 8.2521e-04 2.7697e-03 1.6786e-05 4.0691e-03 6.5536e-03 0:00:16 1843
158 2.1481e-03 1.3552e-03 8.5273e-04 2.8654e-03 1.7917e-05 4.3596e-03 7.4247e-03 0:00:13 1842
159 2.2284e-03 1.4226e-03 8.8347e-04 2.9638e-03 1.8908e-05 4.7241e-03 8.6419e-03 0:00:10 1841
160 2.2965e-03 1.4945e-03 9.1838e-04 3.0470e-03 1.9569e-05 5.0977e-03 9.7267e-03 0:00:08 1840
161 2.3911e-03 1.5557e-03 9.4987e-04 3.1140e-03 2.0148e-05 5.4047e-03 1.0413e-02 0:00:07 1839
162 2.4187e-03 1.6096e-03 9.8014e-04 3.1748e-03 2.0652e-05 5.6902e-03 1.0709e-02 0:00:05 1838
163 2.5115e-03 1.6588e-03 1.0065e-03 3.1942e-03 2.0840e-05 6.0243e-03 1.0970e-02 0:00:04 1837
164 2.5252e-03 1.7036e-03 1.0341e-03 3.1913e-03 2.0799e-05 6.4694e-03 1.1418e-02 0:00:03 1836
165 2.5589e-03 1.7404e-03 1.0536e-03 3.1704e-03 2.0736e-05 6.9128e-03 1.1950e-02 0:00:03 1835

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
166 2.6340e-03 1.7648e-03 1.0771e-03 3.1347e-03 2.0775e-05 7.3862e-03 1.2576e-02 0:00:02 1834
167 2.6427e-03 1.7783e-03 1.0832e-03 3.1056e-03 2.0671e-05 7.7657e-03 1.2993e-02 0:00:02 1833
168 2.6788e-03 1.7953e-03 1.0872e-03 3.0878e-03 2.0402e-05 8.0462e-03 1.3278e-02 0:00:01 1832
169 2.6828e-03 1.7889e-03 1.0777e-03 3.0759e-03 1.9879e-05 8.2588e-03 1.3527e-02 0:06:07 1831
170 2.6808e-03 1.7724e-03 1.0704e-03 3.0571e-03 1.9341e-05 8.3646e-03 1.3641e-02 0:04:54 1830
171 2.6286e-03 1.7547e-03 1.0554e-03 3.0579e-03 1.8500e-05 8.4079e-03 1.3614e-02 0:03:55 1829
172 2.5953e-03 1.7416e-03 1.0464e-03 3.0586e-03 1.7779e-05 8.4203e-03 1.3679e-02 0:03:08 1828
173 2.5802e-03 1.7312e-03 1.0400e-03 3.0593e-03 1.6880e-05 8.4560e-03 1.3840e-02 0:02:30 1827
174 2.5217e-03 1.7228e-03 1.0310e-03 3.0537e-03 1.6259e-05 8.4967e-03 1.3961e-02 0:02:00 1826
175 2.5037e-03 1.7228e-03 1.0330e-03 3.0536e-03 1.5888e-05 8.5446e-03 1.4184e-02 0:01:36 1825
176 2.5109e-03 1.7360e-03 1.0372e-03 3.0533e-03 1.5882e-05 8.6362e-03 1.4546e-02 0:01:17 1824

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
177 2.5350e-03 1.7494e-03 1.0440e-03 3.0858e-03 1.6103e-05 8.7640e-03 1.5152e-02 0:01:01 1823
178 2.6116e-03 1.7684e-03 1.0600e-03 3.1441e-03 1.6674e-05 8.9028e-03 1.5838e-02 0:00:49 1822
179 2.6638e-03 1.7953e-03 1.0811e-03 3.2181e-03 1.7408e-05 9.0336e-03 1.6672e-02 0:00:39 1821

180 2.7099e-03 1.8341e-03 1.0992e-03 3.3041e-03 1.8283e-05 9.0945e-03 1.7115e-02 0:00:31 1820
181 2.7767e-03 1.8802e-03 1.1110e-03 3.4077e-03 1.9266e-05 9.1733e-03 1.7316e-02 0:00:25 1819
182 2.8565e-03 1.9431e-03 1.1317e-03 3.5208e-03 2.0656e-05 9.2607e-03 1.7252e-02 0:00:20 1818
183 3.0047e-03 2.0014e-03 1.1423e-03 3.6557e-03 2.2910e-05 9.3255e-03 1.7326e-02 0:00:16 1817
184 3.1459e-03 2.0851e-03 1.1571e-03 3.8218e-03 2.5550e-05 9.4115e-03 1.7671e-02 0:00:13 1816
185 3.2633e-03 2.1852e-03 1.1751e-03 4.0344e-03 2.8228e-05 9.4225e-03 1.8063e-02 0:00:10 1815
186 3.4112e-03 2.3111e-03 1.2087e-03 4.2699e-03 3.0236e-05 9.4284e-03 1.8617e-02 0:00:08 1814
187 3.4917e-03 2.4412e-03 1.2485e-03 4.5269e-03 3.1404e-05 9.5349e-03 1.9218e-02 0:00:07 1813

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
188 3.5787e-03 2.5786e-03 1.2805e-03 4.7909e-03 3.1445e-05 9.7873e-03 1.9661e-02 0:00:05 1812
189 3.6834e-03 2.6839e-03 1.2991e-03 5.0297e-03 3.0660e-05 1.0117e-02 1.9459e-02 0:00:04 1811
190 3.6244e-03 2.7865e-03 1.2941e-03 5.2174e-03 3.0203e-05 1.0668e-02 1.9956e-02 0:00:03 1810
191 3.5909e-03 2.8505e-03 1.2667e-03 5.3597e-03 3.1426e-05 1.1590e-02 2.2147e-02 0:00:03 1809
192 3.7123e-03 2.9667e-03 1.2387e-03 5.4985e-03 3.3197e-05 1.2281e-02 2.3865e-02 0:00:02 1808
193 3.8459e-03 3.1265e-03 1.2349e-03 5.6622e-03 3.5672e-05 1.2845e-02 2.5158e-02 0:06:03 1807
194 4.0364e-03 3.3011e-03 1.2664e-03 5.8658e-03 3.8486e-05 1.3218e-02 2.5727e-02 0:04:50 1806
195 4.2292e-03 3.4778e-03 1.3164e-03 6.0858e-03 4.1856e-05 1.3545e-02 2.5982e-02 0:03:52 1805
196 4.3866e-03 3.6166e-03 1.3403e-03 6.3310e-03 4.4146e-05 1.3659e-02 2.5583e-02 0:03:06 1804
197 4.5336e-03 3.7742e-03 1.3506e-03 6.6391e-03 4.6668e-05 1.3982e-02 2.5375e-02 0:02:28 1803
198 4.5986e-03 3.8762e-03 1.3648e-03 6.9022e-03 4.6340e-05 1.4181e-02 2.5753e-02 0:01:59 1802

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
199 4.4106e-03 4.0092e-03 1.4025e-03 7.2080e-03 4.6285e-05 1.4347e-02 2.7429e-02 0:01:35 1801
200 4.5244e-03 4.0960e-03 1.4172e-03 7.5136e-03 4.5609e-05 1.4732e-02 3.0416e-02 0:01:16 1800
201 4.4978e-03 4.2247e-03 1.4488e-03 7.8436e-03 4.5348e-05 1.5181e-02 3.2502e-02 0:01:01 1799
202 4.5136e-03 4.3728e-03 1.4756e-03 8.1478e-03 4.5695e-05 1.5417e-02 3.1997e-02 0:00:48 1798
203 4.5218e-03 4.5415e-03 1.4916e-03 8.4637e-03 4.6834e-05 1.5558e-02 3.0117e-02 0:00:39 1797

204 4.7648e-03 4.7566e-03 1.5305e-03 8.6615e-03 4.9480e-05 1.6605e-02 3.3254e-02 0:00:31 1796
205 5.0863e-03 4.9808e-03 1.5912e-03 8.8117e-03 5.2242e-05 1.7457e-02 3.4126e-02 0:00:25 1795
206 5.5010e-03 5.1777e-03 1.6704e-03 8.9101e-03 5.4114e-05 1.7903e-02 3.4619e-02 0:00:20 1794
207 5.5689e-03 5.3991e-03 1.8028e-03 8.9973e-03 5.4900e-05 1.8165e-02 3.4748e-02 0:00:16 1793
208 5.9669e-03 5.4878e-03 1.8995e-03 9.0610e-03 5.5480e-05 1.8453e-02 3.4985e-02 0:00:13 1792
209 6.1910e-03 5.6050e-03 2.0092e-03 9.2510e-03 5.5199e-05 1.8605e-02 3.4578e-02 0:00:10 1791

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
210 6.3165e-03 5.7073e-03 2.0769e-03 9.5146e-03 5.4932e-05 1.8829e-02 3.4522e-02 0:00:08 1790
211 6.3079e-03 5.8137e-03 2.1271e-03 9.8598e-03 5.5025e-05 1.9271e-02 3.5701e-02 0:00:06 1789
212 6.1557e-03 6.0134e-03 2.1833e-03 1.0182e-02 5.4830e-05 1.9884e-02 3.8293e-02 0:00:05 1788
213 6.2063e-03 6.1761e-03 2.2072e-03 1.0410e-02 5.5286e-05 2.0222e-02 4.1052e-02 0:00:04 1787
214 6.2082e-03 6.3146e-03 2.2500e-03 1.0597e-02 5.7339e-05 2.0250e-02 4.2656e-02 0:00:03 1786
215 6.0077e-03 6.5663e-03 2.3129e-03 1.0774e-02 6.0930e-05 2.0161e-02 4.1510e-02 0:00:03 1785
216 6.0564e-03 6.6907e-03 2.3352e-03 1.1041e-02 6.3781e-05 2.0200e-02 3.9256e-02 0:05:59 1784
217 6.1513e-03 6.7883e-03 2.3434e-03 1.1204e-02 6.6554e-05 2.1154e-02 4.2358e-02 0:04:47 1783
218 5.9974e-03 6.8692e-03 2.3799e-03 1.1406e-02 6.6707e-05 2.1624e-02 4.1266e-02 0:03:49 1782
219 6.4617e-03 6.8924e-03 2.4110e-03 1.1508e-02 6.6668e-05 2.1973e-02 4.1171e-02 0:03:03 1781
220 6.7433e-03 6.9940e-03 2.4627e-03 1.1579e-02 6.6737e-05 2.2093e-02 4.0788e-02 0:02:27 1780

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
221 7.0137e-03 7.1280e-03 2.5353e-03 1.1509e-02 6.8212e-05 2.1964e-02 3.9837e-02 0:01:57 1779
222 7.2561e-03 7.2791e-03 2.6334e-03 1.1335e-02 6.8840e-05 2.1390e-02 3.7912e-02 0:01:34 1778
223 7.3496e-03 7.3681e-03 2.7183e-03 1.1172e-02 6.9425e-05 2.0821e-02 3.6312e-02 0:01:15 1777
224 7.3642e-03 7.4683e-03 2.8209e-03 1.1041e-02 6.9163e-05 2.0989e-02 3.6666e-02 0:01:00 1776
225 7.3495e-03 7.5446e-03 2.8560e-03 1.1049e-02 6.8343e-05 2.1644e-02 3.8660e-02 0:00:48 1775
226 7.5647e-03 7.4877e-03 2.8417e-03 1.1132e-02 6.6555e-05 2.2641e-02 4.2073e-02 0:00:38 1774
227 7.3779e-03 7.4100e-03 2.8187e-03 1.1195e-02 6.6187e-05 2.3475e-02 4.4702e-02 0:00:31 1773

228 7.2491e-03 7.3552e-03 2.7835e-03 1.1295e-02 6.6496e-05 2.3591e-02 4.4704e-02 0:00:24 1772
229 7.0517e-03 7.3977e-03 2.8217e-03 1.1356e-02 6.7178e-05 2.2857e-02 4.1379e-02 0:00:20 1771
230 6.8592e-03 7.4406e-03 2.8753e-03 1.1421e-02 6.8137e-05 2.1765e-02 3.9788e-02 0:00:16 1770
231 6.4078e-03 7.4923e-03 2.9085e-03 1.1480e-02 6.8518e-05 2.0350e-02 3.7431e-02 0:00:13 1769

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
232 6.4578e-03 7.4076e-03 2.8686e-03 1.1493e-02 6.9635e-05 1.9650e-02 3.5647e-02 0:00:10 1768
233 6.3412e-03 7.3040e-03 2.7706e-03 1.1559e-02 6.9504e-05 1.9545e-02 3.5267e-02 0:00:08 1767
234 6.6538e-03 7.1982e-03 2.6653e-03 1.1538e-02 6.8389e-05 1.9941e-02 3.5835e-02 0:00:06 1766
235 6.9188e-03 7.1239e-03 2.5806e-03 1.1519e-02 6.8027e-05 2.0298e-02 3.5696e-02 0:00:05 1765
236 7.0401e-03 7.1721e-03 2.5863e-03 1.1391e-02 6.8432e-05 2.0466e-02 3.5360e-02 0:00:04 1764
237 7.1440e-03 7.2188e-03 2.6446e-03 1.1161e-02 6.8687e-05 2.0241e-02 3.5267e-02 0:00:03 1763
238 7.1141e-03 7.2915e-03 2.7317e-03 1.0843e-02 6.8846e-05 1.9929e-02 3.5665e-02 0:00:03 1762
239 7.1460e-03 7.2808e-03 2.7632e-03 1.0632e-02 6.9381e-05 2.0010e-02 3.7193e-02 0:00:02 1761
240 7.1275e-03 7.3396e-03 2.8009e-03 1.0478e-02 6.8181e-05 2.0634e-02 3.8993e-02 0:00:02 1760
241 7.1239e-03 7.2503e-03 2.7996e-03 1.0438e-02 6.5723e-05 2.1011e-02 3.8250e-02 0:05:53 1759
242 6.7424e-03 7.1283e-03 2.7687e-03 1.0399e-02 6.3947e-05 2.1110e-02 3.7982e-02 0:04:42 1758

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
243 6.4134e-03 6.9795e-03 2.7105e-03 1.0397e-02 6.2761e-05 2.0896e-02 3.8134e-02 0:03:46 1757
244 6.0783e-03 6.8617e-03 2.7040e-03 1.0386e-02 6.2213e-05 2.0009e-02 3.5876e-02 0:03:00 1756
245 5.8996e-03 6.7750e-03 2.7012e-03 1.0376e-02 6.2009e-05 1.8828e-02 3.3062e-02 0:02:24 1755
246 6.0254e-03 6.6466e-03 2.6893e-03 1.0304e-02 6.1791e-05 1.7989e-02 3.1136e-02 0:01:55 1754
247 6.1505e-03 6.4825e-03 2.6250e-03 1.0223e-02 6.1328e-05 1.7758e-02 3.0296e-02 0:01:32 1753
248 6.1666e-03 6.3042e-03 2.5012e-03 1.0094e-02 6.1008e-05 1.7497e-02 2.9819e-02 0:01:14 1752
249 6.1176e-03 6.1785e-03 2.4067e-03 9.9635e-03 6.0622e-05 1.7297e-02 2.9492e-02 0:00:59 1751
250 6.0512e-03 6.1488e-03 2.3689e-03 9.8285e-03 6.0215e-05 1.7473e-02 3.0514e-02 0:00:47 1750
251 5.9976e-03 6.1598e-03 2.3491e-03 9.6194e-03 6.0113e-05 1.7710e-02 3.1505e-02 0:00:38 1749

252 5.9066e-03 6.1612e-03 2.3461e-03 9.4022e-03 5.9317e-05 1.7680e-02 3.0963e-02 0:00:30 1748
253 5.7449e-03 6.0844e-03 2.3302e-03 9.2328e-03 5.7249e-05 1.7497e-02 3.0239e-02 0:00:24 1747

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
254 5.4523e-03 5.9906e-03 2.2982e-03 9.0891e-03 5.4104e-05 1.7335e-02 3.0323e-02 0:00:19 1746
255 5.2063e-03 5.8392e-03 2.2180e-03 8.9460e-03 5.0948e-05 1.7052e-02 2.9915e-02 0:00:15 1745
256 5.0764e-03 5.7066e-03 2.1138e-03 8.8056e-03 4.9076e-05 1.6591e-02 2.8718e-02 0:00:12 1744
257 4.9619e-03 5.5808e-03 2.0433e-03 8.6502e-03 4.8659e-05 1.6023e-02 2.7260e-02 0:00:10 1743
258 4.9211e-03 5.4530e-03 1.9933e-03 8.4823e-03 4.9046e-05 1.5456e-02 2.5603e-02 0:00:08 1742
259 4.8204e-03 5.3291e-03 1.9829e-03 8.3692e-03 4.9113e-05 1.4986e-02 2.4491e-02 0:00:06 1741
260 4.8340e-03 5.1734e-03 1.9901e-03 8.2109e-03 4.9210e-05 1.4519e-02 2.3747e-02 0:00:05 1740
261 4.8084e-03 5.0262e-03 1.9811e-03 8.0653e-03 4.9340e-05 1.4168e-02 2.3522e-02 0:00:04 1739
262 4.7408e-03 4.9248e-03 1.9379e-03 7.9219e-03 4.9429e-05 1.4179e-02 2.4026e-02 0:00:03 1738
263 4.6008e-03 4.9043e-03 1.9008e-03 7.7570e-03 4.8708e-05 1.4554e-02 2.5101e-02 0:00:03 1737
264 4.4388e-03 4.9140e-03 1.8689e-03 7.5712e-03 4.7670e-05 1.4767e-02 2.5255e-02 0:00:02 1736

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
265 4.2364e-03 4.8737e-03 1.8353e-03 7.3512e-03 4.5854e-05 1.4656e-02 2.4951e-02 0:05:49 1735
266 4.1256e-03 4.7981e-03 1.8021e-03 7.1532e-03 4.3475e-05 1.4162e-02 2.4139e-02 0:04:39 1734
267 3.9923e-03 4.6414e-03 1.7595e-03 6.9978e-03 4.0538e-05 1.3367e-02 2.2691e-02 0:03:43 1733
268 3.8224e-03 4.4745e-03 1.6950e-03 6.8645e-03 3.8144e-05 1.2653e-02 2.1462e-02 0:02:58 1732
269 3.7641e-03 4.3190e-03 1.6244e-03 6.7501e-03 3.7267e-05 1.2275e-02 2.0822e-02 0:02:22 1731
270 3.7854e-03 4.1749e-03 1.5602e-03 6.6250e-03 3.7915e-05 1.2039e-02 2.0079e-02 0:01:54 1730
271 3.7873e-03 4.0696e-03 1.5373e-03 6.4848e-03 3.8899e-05 1.1787e-02 1.9300e-02 0:01:31 1729
272 3.7101e-03 3.9473e-03 1.5262e-03 6.3548e-03 3.9586e-05 1.1656e-02 1.9039e-02 0:01:13 1728
273 3.6206e-03 3.8347e-03 1.5151e-03 6.2197e-03 3.9078e-05 1.1645e-02 1.9522e-02 0:00:58 1727
274 3.4662e-03 3.7442e-03 1.5128e-03 6.1143e-03 3.7308e-05 1.1849e-02 2.0343e-02 0:00:47 1726
275 3.3840e-03 3.6833e-03 1.4918e-03 5.9917e-03 3.5807e-05 1.2049e-02 2.0943e-02 0:00:37 1725

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
276 3.3217e-03 3.6386e-03 1.4603e-03 5.8385e-03 3.5082e-05 1.2065e-02 2.0958e-02 0:00:30 1724
277 3.2692e-03 3.6015e-03 1.4294e-03 5.6728e-03 3.4635e-05 1.1947e-02 2.0520e-02 0:00:24 1723
278 3.1916e-03 3.5422e-03 1.4244e-03 5.4995e-03 3.4131e-05 1.1620e-02 1.9848e-02 0:00:19 1722
279 3.1499e-03 3.4467e-03 1.4097e-03 5.3611e-03 3.2832e-05 1.1214e-02 1.8984e-02 0:00:15 1721
280 3.0993e-03 3.3400e-03 1.3835e-03 5.2445e-03 3.1525e-05 1.0872e-02 1.8393e-02 0:00:12 1720
281 3.0721e-03 3.2502e-03 1.3521e-03 5.1466e-03 3.0418e-05 1.0700e-02 1.8291e-02 0:00:10 1719
282 3.0746e-03 3.1728e-03 1.3060e-03 5.0480e-03 2.9848e-05 1.0590e-02 1.8107e-02 0:00:08 1718
283 3.0853e-03 3.0916e-03 1.2804e-03 4.9669e-03 3.0252e-05 1.0515e-02 1.7947e-02 0:00:06 1717
284 3.0300e-03 3.0287e-03 1.2800e-03 4.8847e-03 3.1337e-05 1.0390e-02 1.7687e-02 0:00:05 1716
285 3.0155e-03 2.9534e-03 1.2814e-03 4.8359e-03 3.1910e-05 1.0369e-02 1.7696e-02 0:00:04 1715
286 2.9483e-03 2.8954e-03 1.2857e-03 4.8007e-03 3.1484e-05 1.0478e-02 1.8069e-02 0:00:03 1714

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
287 2.8992e-03 2.8570e-03 1.2889e-03 4.7797e-03 3.0341e-05 1.0607e-02 1.8674e-02 0:05:45 1713
288 2.8069e-03 2.8324e-03 1.2706e-03 4.7274e-03 2.8874e-05 1.0705e-02 1.9105e-02 0:04:36 1712
289 2.7551e-03 2.8231e-03 1.2565e-03 4.6712e-03 2.7912e-05 1.0736e-02 1.9180e-02 0:03:41 1711
290 2.7415e-03 2.8061e-03 1.2483e-03 4.6270e-03 2.7640e-05 1.0742e-02 1.8952e-02 0:02:56 1710
291 2.7218e-03 2.7809e-03 1.2560e-03 4.6068e-03 2.7375e-05 1.0753e-02 1.8719e-02 0:02:21 1709
292 2.7592e-03 2.7479e-03 1.2455e-03 4.6046e-03 2.7240e-05 1.0774e-02 1.8602e-02 0:01:53 1708
293 2.8189e-03 2.7263e-03 1.2190e-03 4.5967e-03 2.7031e-05 1.0854e-02 1.8865e-02 0:01:30 1707
294 2.8107e-03 2.7428e-03 1.1945e-03 4.5744e-03 2.6834e-05 1.0955e-02 1.9285e-02 0:01:12 1706
295 2.8914e-03 2.7524e-03 1.1783e-03 4.5247e-03 2.7012e-05 1.1029e-02 1.9493e-02 0:00:58 1705
296 2.9154e-03 2.7200e-03 1.1746e-03 4.4981e-03 2.7986e-05 1.0975e-02 1.9423e-02 0:00:46 1704
297 2.9511e-03 2.6955e-03 1.1909e-03 4.5234e-03 2.9242e-05 1.0752e-02 1.9100e-02 0:00:37 1703

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
298 2.9430e-03 2.6718e-03 1.2115e-03 4.5572e-03 3.0044e-05 1.0512e-02 1.8781e-02 0:00:29 1702

299 2.9226e-03 2.6721e-03 1.2117e-03 4.5845e-03 2.9905e-05 1.0444e-02 1.8783e-02 0:00:24 1701
300 2.8593e-03 2.6747e-03 1.2091e-03 4.6041e-03 2.9418e-05 1.0768e-02 1.9748e-02 0:00:19 1700
301 2.8410e-03 2.6865e-03 1.2119e-03 4.6335e-03 2.9030e-05 1.1175e-02 2.0825e-02 0:00:15 1699
302 2.8681e-03 2.7192e-03 1.2365e-03 4.6928e-03 2.9180e-05 1.1565e-02 2.1890e-02 0:00:12 1698
303 2.9215e-03 2.7612e-03 1.2689e-03 4.7712e-03 2.8932e-05 1.1755e-02 2.1954e-02 0:00:10 1697
304 2.9606e-03 2.8041e-03 1.2955e-03 4.8253e-03 2.8899e-05 1.1854e-02 2.1767e-02 0:00:08 1696
305 2.9896e-03 2.8552e-03 1.3010e-03 4.8912e-03 2.8547e-05 1.1928e-02 2.1791e-02 0:00:06 1695
306 3.0163e-03 2.9301e-03 1.2949e-03 4.9033e-03 2.8515e-05 1.2090e-02 2.2033e-02 0:00:05 1694
307 3.0686e-03 2.9716e-03 1.2699e-03 4.9107e-03 2.8794e-05 1.2153e-02 2.2099e-02 0:00:04 1693
308 3.1426e-03 2.9767e-03 1.2470e-03 4.9154e-03 2.9332e-05 1.2068e-02 2.1709e-02 0:00:03 1692

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
309 3.1988e-03 2.9576e-03 1.2452e-03 4.9395e-03 3.0323e-05 1.1932e-02 2.1140e-02 0:00:03 1691
310 3.2345e-03 2.9437e-03 1.2550e-03 4.9798e-03 3.1029e-05 1.1887e-02 2.0908e-02 0:00:02 1690
311 3.2260e-03 2.9630e-03 1.2665e-03 5.0478e-03 3.1871e-05 1.1944e-02 2.1199e-02 0:00:02 1689
312 3.1852e-03 3.0004e-03 1.2807e-03 5.1054e-03 3.2818e-05 1.1978e-02 2.1620e-02 0:00:01 1688
313 3.2179e-03 3.0430e-03 1.2893e-03 5.1492e-03 3.3746e-05 1.1889e-02 2.1810e-02 0:05:38 1687
314 3.2660e-03 3.0880e-03 1.2999e-03 5.1979e-03 3.4524e-05 1.1963e-02 2.2115e-02 0:04:31 1686
315 3.2910e-03 3.1361e-03 1.3363e-03 5.2887e-03 3.4567e-05 1.2249e-02 2.2893e-02 0:03:36 1685
316 3.2183e-03 3.1890e-03 1.3822e-03 5.4258e-03 3.4135e-05 1.2338e-02 2.2851e-02 0:02:53 1684
317 3.2857e-03 3.2084e-03 1.3885e-03 5.5121e-03 3.2788e-05 1.2583e-02 2.3256e-02 0:02:18 1683
318 3.1809e-03 3.2710e-03 1.3922e-03 5.5833e-03 3.2195e-05 1.2767e-02 2.3512e-02 0:01:51 1682
319 3.1906e-03 3.3506e-03 1.3903e-03 5.6205e-03 3.2202e-05 1.2767e-02 2.3323e-02 0:01:28 1681

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
320 3.1733e-03 3.4033e-03 1.3850e-03 5.6753e-03 3.3038e-05 1.2708e-02 2.2746e-02 0:01:11 1680
321 3.3999e-03 3.4061e-03 1.3926e-03 5.6883e-03 3.4320e-05 1.2620e-02 2.2262e-02 0:00:57 1679
322 3.4516e-03 3.4332e-03 1.4287e-03 5.7998e-03 3.5625e-05 1.2511e-02 2.1590e-02 0:00:45 1678

323 3.6263e-03 3.4223e-03 1.4452e-03 5.8533e-03 3.6466e-05 1.2640e-02 2.1530e-02 0:00:36 1677
324 3.6610e-03 3.4881e-03 1.4608e-03 5.9158e-03 3.6913e-05 1.3089e-02 2.2291e-02 0:00:29 1676
325 3.6970e-03 3.5705e-03 1.4745e-03 5.9418e-03 3.7236e-05 1.3486e-02 2.3311e-02 0:00:23 1675
326 3.6880e-03 3.6647e-03 1.4874e-03 5.9300e-03 3.8377e-05 1.3524e-02 2.3791e-02 0:00:18 1674
327 3.7615e-03 3.7179e-03 1.5062e-03 5.9362e-03 3.9702e-05 1.3505e-02 2.3887e-02 0:00:15 1673
328 3.7447e-03 3.7354e-03 1.5340e-03 5.9751e-03 3.9257e-05 1.3360e-02 2.3697e-02 0:00:12 1672
329 3.6747e-03 3.7313e-03 1.5574e-03 6.0405e-03 3.7650e-05 1.3127e-02 2.3146e-02 0:00:09 1671
330 3.5429e-03 3.7243e-03 1.5461e-03 6.1049e-03 3.5666e-05 1.2921e-02 2.2895e-02 0:00:08 1670

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
331 3.4389e-03 3.7260e-03 1.5248e-03 6.1554e-03 3.4292e-05 1.2759e-02 2.2859e-02 0:00:06 1669
332 3.4209e-03 3.7360e-03 1.5018e-03 6.1622e-03 3.4478e-05 1.2670e-02 2.2696e-02 0:00:05 1668
333 3.4497e-03 3.7529e-03 1.4893e-03 6.1714e-03 3.5633e-05 1.2508e-02 2.2161e-02 0:00:04 1667
334 3.5608e-03 3.7626e-03 1.5012e-03 6.1798e-03 3.6888e-05 1.2409e-02 2.1566e-02 0:00:03 1666
335 3.6171e-03 3.7558e-03 1.5155e-03 6.2537e-03 3.7511e-05 1.2336e-02 2.0998e-02 0:00:02 1665
336 3.7766e-03 3.7200e-03 1.5290e-03 6.2593e-03 3.8421e-05 1.2458e-02 2.1089e-02 0:05:35 1664
337 3.8359e-03 3.7375e-03 1.5396e-03 6.2785e-03 3.8865e-05 1.2884e-02 2.1691e-02 0:04:28 1663
338 3.8157e-03 3.7978e-03 1.5507e-03 6.2675e-03 3.9055e-05 1.3244e-02 2.2413e-02 0:03:34 1662
339 3.7173e-03 3.8714e-03 1.5500e-03 6.2078e-03 3.9600e-05 1.3453e-02 2.3223e-02 0:02:51 1661
340 3.5605e-03 3.9292e-03 1.5635e-03 6.1486e-03 3.9633e-05 1.3295e-02 2.3592e-02 0:02:17 1660
341 3.6609e-03 3.8984e-03 1.5730e-03 6.0745e-03 3.8038e-05 1.2940e-02 2.3265e-02 0:01:49 1659

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
342 3.5246e-03 3.8685e-03 1.5647e-03 6.0183e-03 3.6064e-05 1.2525e-02 2.2177e-02 0:01:27 1658
343 3.4095e-03 3.8167e-03 1.5349e-03 5.9925e-03 3.4214e-05 1.2182e-02 2.1652e-02 0:01:10 1657
344 3.3826e-03 3.7515e-03 1.5040e-03 5.9822e-03 3.2970e-05 1.1924e-02 2.1286e-02 0:00:56 1656
345 3.3926e-03 3.7066e-03 1.4825e-03 5.9351e-03 3.2849e-05 1.1932e-02 2.1149e-02 0:00:45 1655
346 3.3807e-03 3.6922e-03 1.4651e-03 5.8814e-03 3.3732e-05 1.1890e-02 2.0902e-02 0:00:36 1654

347 3.4718e-03 3.6564e-03 1.4630e-03 5.8475e-03 3.4861e-05 1.1769e-02 2.0378e-02 0:00:29 1653
348 3.5101e-03 3.6273e-03 1.4801e-03 5.8369e-03 3.5744e-05 1.1746e-02 2.0211e-02 0:00:23 1652
349 3.5280e-03 3.5660e-03 1.4904e-03 5.8330e-03 3.5864e-05 1.1801e-02 2.0230e-02 0:00:18 1651
350 3.4764e-03 3.5206e-03 1.4812e-03 5.8034e-03 3.5840e-05 1.1963e-02 2.0434e-02 0:00:15 1650
351 3.3576e-03 3.5164e-03 1.4651e-03 5.7564e-03 3.5435e-05 1.2204e-02 2.1062e-02 0:00:12 1649
352 3.3162e-03 3.5266e-03 1.4488e-03 5.6906e-03 3.4917e-05 1.2229e-02 2.1863e-02 0:00:09 1648

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
353 3.2869e-03 3.5161e-03 1.4427e-03 5.6032e-03 3.4486e-05 1.2073e-02 2.1873e-02 0:00:07 1647
354 3.2521e-03 3.4923e-03 1.4372e-03 5.5393e-03 3.3554e-05 1.1715e-02 2.1232e-02 0:00:06 1646
355 3.1956e-03 3.4368e-03 1.4342e-03 5.4854e-03 3.2050e-05 1.1599e-02 2.0850e-02 0:00:05 1645
356 3.1446e-03 3.3842e-03 1.4178e-03 5.4383e-03 3.0702e-05 1.1655e-02 2.0713e-02 0:00:04 1644
357 3.1656e-03 3.3440e-03 1.3850e-03 5.4053e-03 2.9671e-05 1.1744e-02 2.0641e-02 0:00:03 1643
358 3.1842e-03 3.3133e-03 1.3612e-03 5.3251e-03 2.9767e-05 1.1813e-02 2.0660e-02 0:00:02 1642
359 3.2127e-03 3.2971e-03 1.3469e-03 5.2386e-03 3.0399e-05 1.1830e-02 2.0596e-02 0:00:02 1641
360 3.2592e-03 3.2621e-03 1.3581e-03 5.2172e-03 3.1613e-05 1.1657e-02 2.0151e-02 0:05:30 1640
361 3.2705e-03 3.2186e-03 1.3781e-03 5.2188e-03 3.2683e-05 1.1361e-02 1.9625e-02 0:04:23 1639
362 3.2562e-03 3.1695e-03 1.3898e-03 5.2332e-03 3.3110e-05 1.1150e-02 1.9324e-02 0:03:31 1638
363 3.2722e-03 3.1268e-03 1.3867e-03 5.2412e-03 3.2754e-05 1.1172e-02 1.9438e-02 0:02:48 1637

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
364 3.1989e-03 3.1071e-03 1.3631e-03 5.2276e-03 3.2392e-05 1.1440e-02 2.0305e-02 0:02:15 1636
365 3.1458e-03 3.1092e-03 1.3442e-03 5.2036e-03 3.2047e-05 1.1733e-02 2.1216e-02 0:01:48 1635
366 3.1187e-03 3.1083e-03 1.3486e-03 5.1972e-03 3.1831e-05 1.1860e-02 2.1953e-02 0:01:26 1634
367 3.1035e-03 3.1121e-03 1.3683e-03 5.2060e-03 3.1260e-05 1.2036e-02 2.2225e-02 0:01:09 1633
368 3.1231e-03 3.1130e-03 1.3847e-03 5.2283e-03 3.0354e-05 1.2202e-02 2.2178e-02 0:00:55 1632
369 3.1577e-03 3.1237e-03 1.3871e-03 5.2471e-03 2.9663e-05 1.2350e-02 2.2248e-02 0:00:44 1631
370 3.1903e-03 3.1674e-03 1.3730e-03 5.2455e-03 2.9333e-05 1.2578e-02 2.2496e-02 0:00:35 1630

371 3.2461e-03 3.2072e-03 1.3598e-03 5.2124e-03 2.9373e-05 1.2770e-02 2.2939e-02 0:00:28 1629
372 3.2860e-03 3.2054e-03 1.3388e-03 5.1637e-03 2.9993e-05 1.2767e-02 2.2840e-02 0:00:22 1628
373 3.3146e-03 3.1821e-03 1.3375e-03 5.1604e-03 3.1057e-05 1.2537e-02 2.2066e-02 0:00:18 1627
374 3.3434e-03 3.1495e-03 1.3476e-03 5.2006e-03 3.1921e-05 1.2216e-02 2.1198e-02 0:00:14 1626

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
375 3.3510e-03 3.1209e-03 1.3478e-03 5.2498e-03 3.2332e-05 1.2085e-02 2.0976e-02 0:00:11 1625
376 3.3365e-03 3.1142e-03 1.3501e-03 5.2958e-03 3.2826e-05 1.2130e-02 2.1456e-02 0:00:09 1624
377 3.3001e-03 3.1281e-03 1.3474e-03 5.3211e-03 3.3377e-05 1.2159e-02 2.2033e-02 0:00:07 1623
378 3.3229e-03 3.1592e-03 1.3459e-03 5.3254e-03 3.4318e-05 1.2195e-02 2.2310e-02 0:00:06 1622
379 3.3456e-03 3.1864e-03 1.3631e-03 5.3820e-03 3.4614e-05 1.2436e-02 2.3058e-02 0:00:05 1621
380 3.3834e-03 3.2246e-03 1.4076e-03 5.4743e-03 3.4500e-05 1.2764e-02 2.3778e-02 0:00:04 1620
381 3.3963e-03 3.2509e-03 1.4416e-03 5.5742e-03 3.3586e-05 1.3123e-02 2.4257e-02 0:00:03 1619
382 3.3711e-03 3.3193e-03 1.4514e-03 5.6628e-03 3.2539e-05 1.3437e-02 2.4935e-02 0:00:02 1618
383 3.3552e-03 3.3944e-03 1.4588e-03 5.7112e-03 3.1949e-05 1.3585e-02 2.5221e-02 0:00:02 1617
384 3.3722e-03 3.4757e-03 1.4464e-03 5.6918e-03 3.2839e-05 1.3583e-02 2.4774e-02 0:05:25 1616
385 3.3649e-03 3.5193e-03 1.4374e-03 5.7328e-03 3.3647e-05 1.3413e-02 2.4046e-02 0:04:20 1615

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
386 3.5673e-03 3.4948e-03 1.4398e-03 5.7434e-03 3.4646e-05 1.3182e-02 2.3126e-02 0:03:28 1614
387 3.6511e-03 3.4840e-03 1.4605e-03 5.7963e-03 3.5582e-05 1.2949e-02 2.2291e-02 0:02:46 1613
388 3.6809e-03 3.4716e-03 1.4580e-03 5.8667e-03 3.6006e-05 1.3024e-02 2.2192e-02 0:02:13 1612
389 3.7459e-03 3.5169e-03 1.4544e-03 5.8875e-03 3.6163e-05 1.3311e-02 2.2908e-02 0:01:46 1611
390 3.7414e-03 3.5630e-03 1.4508e-03 5.8953e-03 3.6765e-05 1.3611e-02 2.3898e-02 0:01:25 1610
391 3.7010e-03 3.6406e-03 1.4717e-03 5.9099e-03 3.8468e-05 1.3582e-02 2.4345e-02 0:01:08 1609
392 3.8270e-03 3.6876e-03 1.5026e-03 5.9166e-03 3.9769e-05 1.3342e-02 2.3972e-02 0:00:54 1608
393 3.8016e-03 3.6985e-03 1.5341e-03 5.9772e-03 3.9705e-05 1.3241e-02 2.3424e-02 0:00:43 1607
394 3.7501e-03 3.7032e-03 1.5616e-03 6.0703e-03 3.7754e-05 1.3243e-02 2.3281e-02 0:00:35 1606

395 3.6439e-03 3.7225e-03 1.5671e-03 6.1691e-03 3.6000e-05 1.3221e-02 2.3693e-02 0:00:28 1605
396 3.5259e-03 3.7384e-03 1.5459e-03 6.2349e-03 3.4781e-05 1.3271e-02 2.3989e-02 0:00:22 1604

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
397 3.4805e-03 3.8038e-03 1.5175e-03 6.2473e-03 3.5242e-05 1.3265e-02 2.3690e-02 0:00:18 1603
398 3.4385e-03 3.8425e-03 1.5136e-03 6.2907e-03 3.6339e-05 1.3061e-02 2.2925e-02 0:00:14 1602
399 3.6543e-03 3.8358e-03 1.5172e-03 6.2822e-03 3.7670e-05 1.2890e-02 2.2105e-02 0:00:11 1601
400 3.6910e-03 3.8375e-03 1.5444e-03 6.3648e-03 3.7983e-05 1.2729e-02 2.1334e-02 0:00:09 1600
401 3.8492e-03 3.7965e-03 1.5520e-03 6.3717e-03 3.8641e-05 1.2748e-02 2.1289e-02 0:00:07 1599
402 3.9134e-03 3.8219e-03 1.5627e-03 6.3863e-03 3.9048e-05 1.3168e-02 2.2055e-02 0:00:06 1598
403 3.9576e-03 3.8880e-03 1.5681e-03 6.3591e-03 3.9626e-05 1.3630e-02 2.3165e-02 0:00:05 1597
404 3.9252e-03 3.9621e-03 1.5771e-03 6.3092e-03 4.0369e-05 1.3773e-02 2.3769e-02 0:00:04 1596
405 3.8487e-03 4.0364e-03 1.5961e-03 6.2544e-03 4.1205e-05 1.3670e-02 2.3596e-02 0:00:03 1595
406 3.8864e-03 4.0104e-03 1.6190e-03 6.2158e-03 4.0172e-05 1.3334e-02 2.2863e-02 0:05:21 1594
407 3.7503e-03 3.9902e-03 1.6336e-03 6.2202e-03 3.7911e-05 1.2991e-02 2.2203e-02 0:04:17 1593

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
408 3.5997e-03 3.9575e-03 1.6115e-03 6.2283e-03 3.5781e-05 1.2777e-02 2.2058e-02 0:03:25 1592
409 3.5233e-03 3.9102e-03 1.5765e-03 6.2342e-03 3.4421e-05 1.2478e-02 2.1806e-02 0:02:44 1591
410 3.4957e-03 3.8870e-03 1.5540e-03 6.1992e-03 3.4444e-05 1.2364e-02 2.1532e-02 0:02:11 1590
411 3.5134e-03 3.8883e-03 1.5406e-03 6.1692e-03 3.5312e-05 1.2273e-02 2.1142e-02 0:01:45 1589
412 3.5049e-03 3.8767e-03 1.5407e-03 6.1644e-03 3.5945e-05 1.2069e-02 2.0415e-02 0:01:24 1588
413 3.7105e-03 3.8076e-03 1.5439e-03 6.1371e-03 3.6597e-05 1.1867e-02 1.9699e-02 0:01:07 1587
414 3.7187e-03 3.7534e-03 1.5467e-03 6.1220e-03 3.7044e-05 1.1879e-02 1.9662e-02 0:00:54 1586
415 3.6915e-03 3.7138e-03 1.5353e-03 6.0976e-03 3.6800e-05 1.2130e-02 2.0208e-02 0:00:43 1585
416 3.6276e-03 3.7178e-03 1.5278e-03 6.0312e-03 3.6805e-05 1.2467e-02 2.0975e-02 0:00:34 1584
417 3.5774e-03 3.7444e-03 1.5146e-03 5.9423e-03 3.7340e-05 1.2656e-02 2.1684e-02 0:00:27 1583
418 3.4610e-03 3.7837e-03 1.5307e-03 5.8651e-03 3.7400e-05 1.2397e-02 2.1310e-02 0:00:22 1582

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
419 3.5128e-03 3.7349e-03 1.5196e-03 5.7757e-03 3.6081e-05 1.1990e-02 2.0659e-02 0:00:18 1581
420 3.3758e-03 3.6930e-03 1.5068e-03 5.6976e-03 3.3937e-05 1.1642e-02 2.0240e-02 0:00:14 1580
421 3.2633e-03 3.6278e-03 1.4844e-03 5.6453e-03 3.1858e-05 1.1463e-02 2.0033e-02 0:00:11 1579
422 3.2305e-03 3.5650e-03 1.4456e-03 5.5768e-03 3.0536e-05 1.1321e-02 1.9538e-02 0:00:09 1578
423 3.2249e-03 3.5047e-03 1.4254e-03 5.5038e-03 3.0502e-05 1.1311e-02 1.9294e-02 0:00:07 1577
424 3.2268e-03 3.4658e-03 1.4102e-03 5.4395e-03 3.1237e-05 1.1240e-02 1.8988e-02 0:00:06 1576
425 3.2741e-03 3.4180e-03 1.4079e-03 5.3865e-03 3.2142e-05 1.1036e-02 1.8379e-02 0:00:05 1575
426 3.3196e-03 3.3679e-03 1.4220e-03 5.3736e-03 3.2764e-05 1.0788e-02 1.7937e-02 0:00:04 1574
427 3.3328e-03 3.3010e-03 1.4257e-03 5.3559e-03 3.2597e-05 1.0686e-02 1.7897e-02 0:00:03 1573
428 3.3085e-03 3.2400e-03 1.4170e-03 5.3134e-03 3.2454e-05 1.0839e-02 1.8214e-02 0:00:02 1572
429 3.2331e-03 3.2109e-03 1.3902e-03 5.2622e-03 3.2488e-05 1.1066e-02 1.8890e-02 0:00:02 1571

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
430 3.1656e-03 3.2059e-03 1.3658e-03 5.1820e-03 3.2357e-05 1.1148e-02 1.9313e-02 0:05:15 1570
431 3.1234e-03 3.1954e-03 1.3561e-03 5.1156e-03 3.2049e-05 1.1011e-02 1.9193e-02 0:04:12 1569
432 3.0619e-03 3.1644e-03 1.3495e-03 5.0656e-03 3.1408e-05 1.0794e-02 1.8807e-02 0:03:22 1568
433 3.0060e-03 3.1289e-03 1.3431e-03 5.0436e-03 3.0345e-05 1.0803e-02 1.8738e-02 0:02:41 1567
434 3.0134e-03 3.0901e-03 1.3339e-03 5.0139e-03 2.9002e-05 1.0964e-02 1.8972e-02 0:02:09 1566
435 2.9926e-03 3.0663e-03 1.3147e-03 4.9791e-03 2.8081e-05 1.1084e-02 1.8999e-02 0:01:43 1565
436 2.9996e-03 3.0706e-03 1.2850e-03 4.9264e-03 2.7883e-05 1.1198e-02 1.9113e-02 0:01:22 1564
437 3.0333e-03 3.0545e-03 1.2691e-03 4.8597e-03 2.8298e-05 1.1164e-02 1.8943e-02 0:01:06 1563
438 3.0500e-03 3.0237e-03 1.2674e-03 4.8041e-03 2.9069e-05 1.0904e-02 1.8384e-02 0:00:53 1562
439 3.0853e-03 2.9705e-03 1.2795e-03 4.8235e-03 2.9715e-05 1.0602e-02 1.7867e-02 0:00:42 1561
440 3.1107e-03 2.9202e-03 1.2881e-03 4.8370e-03 2.9934e-05 1.0386e-02 1.7599e-02 0:00:34 1560

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
441 3.1047e-03 2.8915e-03 1.2858e-03 4.8558e-03 3.0133e-05 1.0413e-02 1.7815e-02 0:00:27 1559

442 3.0555e-03 2.8827e-03 1.2709e-03 4.8410e-03 3.0171e-05 1.0441e-02 1.8260e-02 0:00:22 1558
443 3.0322e-03 2.8866e-03 1.2573e-03 4.8015e-03 3.0279e-05 1.0651e-02 1.8775e-02 0:00:17 1557
444 2.9996e-03 2.8838e-03 1.2579e-03 4.8015e-03 3.0401e-05 1.0778e-02 1.9284e-02 0:00:14 1556
445 3.0014e-03 2.9033e-03 1.2785e-03 4.8431e-03 3.0166e-05 1.0865e-02 1.9479e-02 0:00:11 1555
446 2.9739e-03 2.9068e-03 1.3000e-03 4.8924e-03 2.9309e-05 1.1083e-02 1.9774e-02 0:00:09 1554
447 2.9663e-03 2.9240e-03 1.3023e-03 4.9358e-03 2.8323e-05 1.1319e-02 2.0072e-02 0:00:07 1553
448 2.9872e-03 2.9699e-03 1.2919e-03 4.9443e-03 2.7699e-05 1.1518e-02 2.0487e-02 0:00:06 1552
449 2.9727e-03 3.0243e-03 1.2702e-03 4.9209e-03 2.8035e-05 1.1719e-02 2.0739e-02 0:00:04 1551
450 3.0552e-03 3.0241e-03 1.2494e-03 4.9081e-03 2.8896e-05 1.1683e-02 2.0472e-02 0:00:04 1550
451 3.1390e-03 3.0224e-03 1.2533e-03 4.9072e-03 2.9951e-05 1.1437e-02 1.9792e-02 0:00:03 1549

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
452 3.1867e-03 2.9904e-03 1.2702e-03 4.9511e-03 3.0755e-05 1.1163e-02 1.8970e-02 0:00:02 1548
453 3.2037e-03 2.9794e-03 1.2757e-03 4.9985e-03 3.0763e-05 1.1162e-02 1.8908e-02 0:05:11 1547
454 3.2506e-03 2.9806e-03 1.2691e-03 5.0274e-03 3.0749e-05 1.1291e-02 1.9498e-02 0:04:09 1546
455 3.1693e-03 3.0131e-03 1.2758e-03 5.0504e-03 3.1837e-05 1.1440e-02 2.0246e-02 0:03:19 1545
456 3.2464e-03 3.0501e-03 1.2784e-03 5.0504e-03 3.2905e-05 1.1406e-02 2.0526e-02 0:02:39 1544
457 3.1783e-03 3.0958e-03 1.2921e-03 5.0819e-03 3.3677e-05 1.1375e-02 2.0367e-02 0:02:07 1543
458 3.2744e-03 3.1104e-03 1.3211e-03 5.1386e-03 3.3256e-05 1.1375e-02 2.0169e-02 0:01:42 1542
459 3.2217e-03 3.1181e-03 1.3488e-03 5.2294e-03 3.2349e-05 1.1506e-02 2.0522e-02 0:01:21 1541
460 3.1492e-03 3.1504e-03 1.3498e-03 5.3250e-03 3.1205e-05 1.1723e-02 2.1116e-02 0:01:05 1540
461 3.0384e-03 3.2235e-03 1.3496e-03 5.3867e-03 3.0651e-05 1.1868e-02 2.1350e-02 0:00:52 1539
462 3.1015e-03 3.2378e-03 1.3189e-03 5.3768e-03 3.0909e-05 1.1934e-02 2.1247e-02 0:00:42 1538

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
463 3.1586e-03 3.2684e-03 1.3150e-03 5.3940e-03 3.2310e-05 1.1857e-02 2.0667e-02 0:00:33 1537
464 3.2392e-03 3.2984e-03 1.3310e-03 5.4686e-03 3.2976e-05 1.1624e-02 1.9795e-02 0:00:27 1536
465 3.4133e-03 3.2657e-03 1.3511e-03 5.5001e-03 3.3677e-05 1.1503e-02 1.9271e-02 0:00:21 1535

466 3.4698e-03 3.2723e-03 1.3664e-03 5.5413e-03 3.4222e-05 1.1615e-02 1.9393e-02 0:00:17 1534
467 3.4805e-03 3.3250e-03 1.3756e-03 5.5633e-03 3.4340e-05 1.2052e-02 2.0427e-02 0:00:14 1533
468 3.5094e-03 3.3936e-03 1.3822e-03 5.5564e-03 3.4539e-05 1.2329e-02 2.1401e-02 0:00:11 1532
469 3.5540e-03 3.4477e-03 1.3909e-03 5.5215e-03 3.5773e-05 1.2283e-02 2.1586e-02 0:00:09 1531
470 3.5897e-03 3.4797e-03 1.4092e-03 5.5068e-03 3.6407e-05 1.2239e-02 2.1196e-02 0:00:07 1530
471 3.5213e-03 3.4845e-03 1.4399e-03 5.5491e-03 3.5836e-05 1.2010e-02 2.0565e-02 0:00:06 1529
472 3.4139e-03 3.4814e-03 1.4513e-03 5.6020e-03 3.4048e-05 1.1884e-02 2.0369e-02 0:00:04 1528
473 3.3064e-03 3.4684e-03 1.4252e-03 5.6505e-03 3.2309e-05 1.1747e-02 2.0470e-02 0:05:09 1527

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
474 3.2580e-03 3.4641e-03 1.4066e-03 5.6730e-03 3.1889e-05 1.1644e-02 2.0364e-02 0:04:07 1526
475 3.2281e-03 3.4804e-03 1.3852e-03 5.6687e-03 3.2283e-05 1.1570e-02 2.0009e-02 0:03:17 1525
476 3.2031e-03 3.4903e-03 1.3830e-03 5.6918e-03 3.3002e-05 1.1433e-02 1.9519e-02 0:02:38 1524
477 3.4324e-03 3.4671e-03 1.3906e-03 5.6852e-03 3.3785e-05 1.1274e-02 1.8854e-02 0:02:06 1523
478 3.4802e-03 3.4436e-03 1.4036e-03 5.7177e-03 3.4422e-05 1.1174e-02 1.8474e-02 0:01:41 1522
479 3.4902e-03 3.4278e-03 1.4113e-03 5.7243e-03 3.4940e-05 1.1333e-02 1.8841e-02 0:01:21 1521
480 3.4746e-03 3.4466e-03 1.4077e-03 5.7003e-03 3.4800e-05 1.1754e-02 1.9684e-02 0:01:04 1520
481 3.4837e-03 3.4986e-03 1.4129e-03 5.6521e-03 3.4877e-05 1.2026e-02 2.0435e-02 0:00:52 1519
482 3.4949e-03 3.5309e-03 1.4135e-03 5.5768e-03 3.5619e-05 1.2073e-02 2.0555e-02 0:00:41 1518
483 3.4521e-03 3.5491e-03 1.4239e-03 5.5185e-03 3.5348e-05 1.1804e-02 1.9964e-02 0:00:33 1517
484 3.3701e-03 3.5414e-03 1.4408e-03 5.4874e-03 3.3991e-05 1.1472e-02 1.9456e-02 0:00:26 1516

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
485 3.2189e-03 3.5073e-03 1.4331e-03 5.4776e-03 3.2023e-05 1.1321e-02 1.9361e-02 0:00:21 1515
486 3.1469e-03 3.4600e-03 1.3937e-03 5.4692e-03 3.0613e-05 1.1106e-02 1.9168e-02 0:00:17 1514
487 3.1186e-03 3.4227e-03 1.3770e-03 5.4486e-03 3.0140e-05 1.0975e-02 1.8815e-02 0:00:13 1513
488 3.0951e-03 3.3981e-03 1.3614e-03 5.3998e-03 3.0255e-05 1.0931e-02 1.8580e-02 0:00:11 1512
489 3.1465e-03 3.3695e-03 1.3595e-03 5.3503e-03 3.1214e-05 1.0762e-02 1.7977e-02 0:00:09 1511

490 3.2223e-03 3.3419e-03 1.3706e-03 5.3542e-03 3.1956e-05 1.0509e-02 1.7364e-02 0:00:07 1510
491 3.2916e-03 3.2900e-03 1.3718e-03 5.3405e-03 3.2208e-05 1.0475e-02 1.7306e-02 0:00:05 1509
492 3.2789e-03 3.2396e-03 1.3704e-03 5.3282e-03 3.2033e-05 1.0607e-02 1.7593e-02 0:00:04 1508
493 3.2219e-03 3.2150e-03 1.3500e-03 5.2804e-03 3.1862e-05 1.0846e-02 1.8147e-02 0:00:04 1507
494 3.1648e-03 3.2242e-03 1.3335e-03 5.2225e-03 3.2114e-05 1.1043e-02 1.8641e-02 0:00:03 1506
495 3.1426e-03 3.2225e-03 1.3200e-03 5.1472e-03 3.2415e-05 1.0974e-02 1.8649e-02 0:00:02 1505

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
496 3.1417e-03 3.2185e-03 1.3244e-03 5.0804e-03 3.2121e-05 1.0714e-02 1.8215e-02 0:00:02 1504
497 3.0560e-03 3.1950e-03 1.3272e-03 5.0535e-03 3.0753e-05 1.0531e-02 1.7992e-02 0:00:01 1503
498 2.9747e-03 3.1546e-03 1.3208e-03 5.0254e-03 2.9204e-05 1.0572e-02 1.8123e-02 0:05:02 1502
499 2.9178e-03 3.1163e-03 1.3006e-03 5.0082e-03 2.8008e-05 1.0656e-02 1.8183e-02 0:04:01 1501
500 2.8391e-03 3.1244e-03 1.2895e-03 4.9829e-03 2.7339e-05 1.0687e-02 1.8128e-02 0:03:13 1500
501 2.8985e-03 3.0785e-03 1.2704e-03 4.9031e-03 2.7803e-05 1.0729e-02 1.8061e-02 0:02:34 1499
502 2.9858e-03 3.0634e-03 1.2699e-03 4.8489e-03 2.8626e-05 1.0526e-02 1.7533e-02 0:02:03 1498
503 3.0319e-03 3.0338e-03 1.2786e-03 4.8489e-03 2.9508e-05 1.0253e-02 1.6933e-02 0:01:38 1497
504 3.0701e-03 2.9822e-03 1.2850e-03 4.8622e-03 2.9568e-05 1.0056e-02 1.6684e-02 0:01:19 1496
505 3.0745e-03 2.9336e-03 1.2838e-03 4.8616e-03 2.9416e-05 1.0098e-02 1.6854e-02 0:01:03 1495
506 3.0243e-03 2.9185e-03 1.2662e-03 4.8495e-03 2.9314e-05 1.0190e-02 1.7384e-02 0:00:50 1494

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
507 3.0112e-03 2.9147e-03 1.2440e-03 4.8055e-03 2.9724e-05 1.0350e-02 1.7813e-02 0:00:40 1493
508 2.9936e-03 2.9142e-03 1.2341e-03 4.7604e-03 3.0056e-05 1.0421e-02 1.8045e-02 0:00:32 1492
509 2.9742e-03 2.9108e-03 1.2399e-03 4.7569e-03 2.9920e-05 1.0362e-02 1.7970e-02 0:00:26 1491
510 2.9227e-03 2.9015e-03 1.2621e-03 4.7865e-03 2.9166e-05 1.0472e-02 1.8179e-02 0:00:21 1490
511 2.8861e-03 2.8943e-03 1.2673e-03 4.8147e-03 2.7926e-05 1.0724e-02 1.8663e-02 0:00:16 1489
512 2.8716e-03 2.9086e-03 1.2675e-03 4.8289e-03 2.6858e-05 1.0883e-02 1.8873e-02 0:00:13 1488
513 2.8761e-03 2.9418e-03 1.2536e-03 4.8077e-03 2.6630e-05 1.1061e-02 1.9151e-02 0:00:11 1487

514 2.8228e-03 2.9900e-03 1.2378e-03 4.7890e-03 2.7265e-05 1.1149e-02 1.9142e-02 0:00:08 1486
515 2.9858e-03 2.9639e-03 1.2305e-03 4.7534e-03 2.8235e-05 1.1015e-02 1.8754e-02 0:00:07 1485
516 3.0349e-03 2.9457e-03 1.2393e-03 4.7703e-03 2.9149e-05 1.0722e-02 1.7968e-02 0:00:05 1484
517 3.0609e-03 2.9048e-03 1.2490e-03 4.8169e-03 2.9361e-05 1.0525e-02 1.7509e-02 0:00:04 1483

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
518 3.1214e-03 2.8903e-03 1.2453e-03 4.8390e-03 2.9076e-05 1.0574e-02 1.7664e-02 0:00:03 1482
519 3.1057e-03 2.8952e-03 1.2376e-03 4.8466e-03 2.9250e-05 1.0742e-02 1.8445e-02 0:00:03 1481
520 3.0629e-03 2.9127e-03 1.2350e-03 4.8337e-03 3.0353e-05 1.0795e-02 1.9021e-02 0:04:58 1480
521 3.1247e-03 2.9303e-03 1.2365e-03 4.8198e-03 3.1361e-05 1.0716e-02 1.8984e-02 0:03:58 1479
522 3.1592e-03 2.9596e-03 1.2599e-03 4.8446e-03 3.1729e-05 1.0690e-02 1.8667e-02 0:03:11 1478
523 3.1126e-03 2.9719e-03 1.2899e-03 4.9238e-03 3.0999e-05 1.0778e-02 1.8714e-02 0:02:32 1477
524 3.0686e-03 2.9788e-03 1.3037e-03 5.0074e-03 2.9815e-05 1.1013e-02 1.9357e-02 0:02:02 1476
525 3.0025e-03 3.0169e-03 1.2937e-03 5.0691e-03 2.8844e-05 1.1281e-02 1.9926e-02 0:01:37 1475
526 2.9517e-03 3.0730e-03 1.2824e-03 5.0909e-03 2.8903e-05 1.1415e-02 2.0127e-02 0:01:18 1474
527 2.9753e-03 3.1030e-03 1.2681e-03 5.0852e-03 2.9808e-05 1.1426e-02 1.9930e-02 0:01:02 1473
528 2.9953e-03 3.1387e-03 1.2669e-03 5.1221e-03 3.0783e-05 1.1262e-02 1.9321e-02 0:00:50 1472

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
529 3.1872e-03 3.1170e-03 1.2817e-03 5.1405e-03 3.1399e-05 1.1073e-02 1.8596e-02 0:00:40 1471
530 3.2754e-03 3.0922e-03 1.2974e-03 5.1865e-03 3.1904e-05 1.1019e-02 1.8319e-02 0:00:32 1470
531 3.3305e-03 3.1036e-03 1.2998e-03 5.2135e-03 3.1820e-05 1.1156e-02 1.8597e-02 0:00:25 1469
532 3.3510e-03 3.1388e-03 1.2993e-03 5.2226e-03 3.1840e-05 1.1496e-02 1.9420e-02 0:00:20 1468
533 3.2716e-03 3.2174e-03 1.3051e-03 5.1977e-03 3.2643e-05 1.1641e-02 2.0109e-02 0:00:16 1467
534 3.4032e-03 3.2246e-03 1.3144e-03 5.1714e-03 3.3808e-05 1.1554e-02 2.0182e-02 0:00:13 1466
535 3.4444e-03 3.2618e-03 1.3445e-03 5.1845e-03 3.4437e-05 1.1401e-02 1.9413e-02 0:00:10 1465
536 3.3755e-03 3.2757e-03 1.3732e-03 5.2312e-03 3.3527e-05 1.1236e-02 1.9020e-02 0:00:08 1464
537 3.2598e-03 3.2702e-03 1.3793e-03 5.3118e-03 3.1888e-05 1.1221e-02 1.8965e-02 0:00:07 1463

538 3.1483e-03 3.2804e-03 1.3585e-03 5.3703e-03 3.0678e-05 1.1209e-02 1.9339e-02 0:00:05 1462
539 3.0976e-03 3.2870e-03 1.3319e-03 5.3991e-03 3.0489e-05 1.1242e-02 1.9446e-02 0:00:04 1461

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
540 3.0964e-03 3.2929e-03 1.3173e-03 5.4009e-03 3.1149e-05 1.1222e-02 1.9316e-02 0:00:03 1460
541 3.1008e-03 3.3243e-03 1.3237e-03 5.4301e-03 3.1966e-05 1.1030e-02 1.8556e-02 0:04:55 1459
542 3.2944e-03 3.3002e-03 1.3316e-03 5.4445e-03 3.2637e-05 1.0834e-02 1.7891e-02 0:03:55 1458
543 3.3621e-03 3.2683e-03 1.3416e-03 5.4661e-03 3.3216e-05 1.0750e-02 1.7693e-02 0:03:08 1457
544 3.3647e-03 3.2704e-03 1.3501e-03 5.4846e-03 3.3358e-05 1.0938e-02 1.7981e-02 0:02:30 1456
545 3.3905e-03 3.3160e-03 1.3517e-03 5.4663e-03 3.3416e-05 1.1372e-02 1.8939e-02 0:02:00 1455
546 3.4115e-03 3.3740e-03 1.3556e-03 5.3967e-03 3.3651e-05 1.1601e-02 1.9531e-02 0:01:36 1454
547 3.4381e-03 3.4018e-03 1.3636e-03 5.3300e-03 3.4329e-05 1.1527e-02 1.9287e-02 0:01:17 1453
548 3.3808e-03 3.4154e-03 1.3773e-03 5.2942e-03 3.4296e-05 1.1318e-02 1.8669e-02 0:01:01 1452
549 3.2992e-03 3.3991e-03 1.3963e-03 5.2874e-03 3.2744e-05 1.1054e-02 1.8383e-02 0:00:49 1451
550 3.1544e-03 3.3734e-03 1.3862e-03 5.3043e-03 3.0814e-05 1.0905e-02 1.8309e-02 0:00:39 1450

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
551 3.0761e-03 3.3352e-03 1.3512e-03 5.3074e-03 2.9674e-05 1.0748e-02 1.8264e-02 0:00:31 1449
552 3.0253e-03 3.3095e-03 1.3350e-03 5.2915e-03 2.9692e-05 1.0680e-02 1.7973e-02 0:00:25 1448
553 3.0224e-03 3.3013e-03 1.3252e-03 5.2562e-03 3.0211e-05 1.0540e-02 1.7578e-02 0:00:20 1447
554 3.1002e-03 3.2745e-03 1.3246e-03 5.2283e-03 3.0956e-05 1.0363e-02 1.6983e-02 0:00:16 1446
555 3.1908e-03 3.2443e-03 1.3312e-03 5.2400e-03 3.1233e-05 1.0125e-02 1.6409e-02 0:00:13 1445
556 3.2145e-03 3.1898e-03 1.3368e-03 5.2432e-03 3.1369e-05 9.9966e-03 1.6276e-02 0:00:10 1444
557 3.1688e-03 3.1466e-03 1.3259e-03 5.2027e-03 3.1060e-05 1.0261e-02 1.6873e-02 0:00:08 1443
558 3.1338e-03 3.1563e-03 1.3008e-03 5.1369e-03 3.0740e-05 1.0607e-02 1.7546e-02 0:00:07 1442
559 3.1353e-03 3.1757e-03 1.2890e-03 5.0558e-03 3.1087e-05 1.0730e-02 1.7791e-02 0:00:05 1441
560 3.1350e-03 3.1785e-03 1.2893e-03 4.9807e-03 3.1578e-05 1.0598e-02 1.7334e-02 0:00:04 1440
561 3.0886e-03 3.1652e-03 1.2973e-03 4.9229e-03 3.1105e-05 1.0280e-02 1.6859e-02 0:00:03 1439

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
562 2.9914e-03 3.1368e-03 1.2984e-03 4.8916e-03 2.9664e-05 1.0109e-02 1.6787e-02 0:00:03 1438
563 2.8728e-03 3.0865e-03 1.2821e-03 4.8693e-03 2.7900e-05 1.0034e-02 1.6805e-02 0:00:02 1437
564 2.8159e-03 3.0479e-03 1.2605e-03 4.8374e-03 2.6940e-05 9.9956e-03 1.6717e-02 0:00:02 1436
565 2.6935e-03 3.0530e-03 1.2496e-03 4.8086e-03 2.6646e-05 9.9710e-03 1.6531e-02 0:04:48 1435
566 2.8073e-03 3.0076e-03 1.2361e-03 4.7308e-03 2.7096e-05 9.9211e-03 1.6302e-02 0:03:51 1434
567 2.8477e-03 2.9670e-03 1.2343e-03 4.6900e-03 2.7923e-05 9.6297e-03 1.5624e-02 0:03:04 1433
568 2.9102e-03 2.9220e-03 1.2416e-03 4.6978e-03 2.8343e-05 9.3646e-03 1.5200e-02 0:02:27 1432
569 2.9626e-03 2.8698e-03 1.2439e-03 4.6932e-03 2.8336e-05 9.2964e-03 1.5230e-02 0:01:58 1431
570 2.9417e-03 2.8260e-03 1.2316e-03 4.6740e-03 2.7901e-05 9.4450e-03 1.5563e-02 0:01:34 1430
571 2.8571e-03 2.8229e-03 1.2063e-03 4.6212e-03 2.7867e-05 9.6020e-03 1.5954e-02 0:01:15 1429
572 2.8662e-03 2.8173e-03 1.1832e-03 4.5526e-03 2.8346e-05 9.7145e-03 1.6160e-02 0:01:00 1428

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
573 2.8468e-03 2.8098e-03 1.1808e-03 4.4967e-03 2.8640e-05 9.6201e-03 1.6041e-02 0:00:48 1427
574 2.8346e-03 2.7999e-03 1.1869e-03 4.4697e-03 2.8304e-05 9.4655e-03 1.5731e-02 0:00:38 1426
575 2.7587e-03 2.7722e-03 1.1926e-03 4.4799e-03 2.7122e-05 9.5029e-03 1.5899e-02 0:00:31 1425
576 2.7037e-03 2.7527e-03 1.1897e-03 4.4783e-03 2.5997e-05 9.6952e-03 1.6304e-02 0:00:25 1424
577 2.6765e-03 2.7500e-03 1.1763e-03 4.4705e-03 2.4992e-05 9.8317e-03 1.6478e-02 0:00:20 1423
578 2.6299e-03 2.7676e-03 1.1652e-03 4.4375e-03 2.4954e-05 9.9381e-03 1.6647e-02 0:00:16 1422
579 2.6827e-03 2.7664e-03 1.1555e-03 4.3885e-03 2.5607e-05 9.9155e-03 1.6504e-02 0:00:13 1421
580 2.7448e-03 2.7502e-03 1.1564e-03 4.3621e-03 2.6411e-05 9.6816e-03 1.5937e-02 0:00:10 1420
581 2.8008e-03 2.7035e-03 1.1623e-03 4.3932e-03 2.6920e-05 9.3721e-03 1.5377e-02 0:00:08 1419
582 2.8399e-03 2.6648e-03 1.1638e-03 4.4003e-03 2.6788e-05 9.3349e-03 1.5266e-02 0:00:06 1418
583 2.8506e-03 2.6400e-03 1.1544e-03 4.4190e-03 2.6307e-05 9.4502e-03 1.5747e-02 0:00:05 1417

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
584 2.8171e-03 2.6542e-03 1.1397e-03 4.3941e-03 2.6715e-05 9.5597e-03 1.6350e-02 0:00:04 1416

585 2.8183e-03 2.6540e-03 1.1309e-03 4.3617e-03 2.7439e-05 9.5731e-03 1.6519e-02 0:00:03 1415
586 2.7852e-03 2.6799e-03 1.1362e-03 4.3620e-03 2.8245e-05 9.4765e-03 1.6261e-02 0:00:03 1414
587 2.8544e-03 2.6723e-03 1.1542e-03 4.3768e-03 2.8127e-05 9.4622e-03 1.6095e-02 0:04:45 1413
588 2.7954e-03 2.6701e-03 1.1735e-03 4.4374e-03 2.7364e-05 9.6638e-03 1.6472e-02 0:03:48 1412
589 2.7400e-03 2.6820e-03 1.1798e-03 4.5056e-03 2.6277e-05 9.9155e-03 1.7092e-02 0:03:02 1411
590 2.7119e-03 2.7292e-03 1.1692e-03 4.5259e-03 2.5515e-05 1.0161e-02 1.7571e-02 0:02:25 1410
591 2.6894e-03 2.7695e-03 1.1553e-03 4.5242e-03 2.6028e-05 1.0259e-02 1.7659e-02 0:01:56 1409
592 2.6633e-03 2.7968e-03 1.1499e-03 4.5358e-03 2.6737e-05 1.0216e-02 1.7370e-02 0:01:33 1408
593 2.8355e-03 2.7912e-03 1.1498e-03 4.5345e-03 2.7445e-05 1.0048e-02 1.6886e-02 0:01:14 1407
594 2.9255e-03 2.7713e-03 1.1647e-03 4.5805e-03 2.8133e-05 9.8829e-03 1.6316e-02 0:00:59 1406

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
595 2.9768e-03 2.7497e-03 1.1745e-03 4.6211e-03 2.8240e-05 9.8930e-03 1.6297e-02 0:00:47 1405
596 3.0088e-03 2.7668e-03 1.1693e-03 4.6300e-03 2.7862e-05 1.0104e-02 1.6895e-02 0:00:38 1404
597 3.0144e-03 2.8051e-03 1.1649e-03 4.6155e-03 2.8031e-05 1.0300e-02 1.7571e-02 0:00:30 1403
598 2.9794e-03 2.8527e-03 1.1676e-03 4.6022e-03 2.9308e-05 1.0299e-02 1.7812e-02 0:00:24 1402
599 3.0927e-03 2.8603e-03 1.1822e-03 4.5864e-03 3.0305e-05 1.0114e-02 1.7318e-02 0:00:19 1401
600 3.0620e-03 2.8870e-03 1.2131e-03 4.6265e-03 3.0524e-05 9.9736e-03 1.6767e-02 0:00:16 1400
601 2.9994e-03 2.8783e-03 1.2340e-03 4.6971e-03 2.9683e-05 9.9706e-03 1.6762e-02 0:00:12 1399
602 2.9003e-03 2.8851e-03 1.2328e-03 4.7809e-03 2.8450e-05 9.9914e-03 1.6941e-02 0:00:10 1398
603 2.8496e-03 2.9047e-03 1.2115e-03 4.8235e-03 2.7581e-05 1.0143e-02 1.7482e-02 0:00:08 1397
604 2.8039e-03 2.9305e-03 1.1864e-03 4.8355e-03 2.7921e-05 1.0323e-02 1.7678e-02 0:00:06 1396
605 2.7990e-03 2.9578e-03 1.1868e-03 4.8783e-03 2.8652e-05 1.0221e-02 1.7263e-02 0:00:05 1395

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
606 2.9838e-03 2.9608e-03 1.1970e-03 4.8790e-03 2.9422e-05 1.0046e-02 1.6661e-02 0:00:04 1394
607 3.0662e-03 2.9529e-03 1.2125e-03 4.9221e-03 3.0074e-05 9.8803e-03 1.6230e-02 0:00:03 1393
608 3.1061e-03 2.9423e-03 1.2253e-03 4.9500e-03 3.0293e-05 9.9289e-03 1.6263e-02 0:00:03 1392

609 3.1306e-03 2.9668e-03 1.2262e-03 4.9555e-03 3.0412e-05 1.0214e-02 1.6901e-02
0:00:02 1391
610 3.1732e-03 3.0155e-03 1.2241e-03 4.9125e-03 3.0578e-05 1.0571e-02 1.7713e-02
0:00:02 1390
611 3.1474e-03 3.0777e-03 1.2342e-03 4.8635e-03 3.1048e-05 1.0618e-02 1.7829e-02
0:00:01 1389
612 3.2657e-03 3.0722e-03 1.2391e-03 4.8181e-03 3.1399e-05 1.0426e-02 1.7114e-02
0:04:39 1388
613 3.1761e-03 3.0838e-03 1.2628e-03 4.8145e-03 3.1125e-05 1.0239e-02 1.6721e-02
0:03:43 1387
614 3.0423e-03 3.0686e-03 1.2753e-03 4.8463e-03 2.9711e-05 1.0121e-02 1.6730e-02
0:02:58 1386
615 2.9128e-03 3.0582e-03 1.2590e-03 4.8730e-03 2.8304e-05 1.0032e-02 1.6639e-02
0:02:22 1385
616 2.8470e-03 3.0390e-03 1.2342e-03 4.8881e-03 2.7842e-05 9.9459e-03 1.6610e-02
0:01:54 1384

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
617 2.8444e-03 3.0310e-03 1.2204e-03 4.8798e-03 2.8208e-05 9.8779e-03 1.6416e-02
0:01:31 1383
618 2.9048e-03 3.0111e-03 1.2181e-03 4.8622e-03 2.8743e-05 9.7267e-03 1.5945e-02
0:01:13 1382
619 2.9020e-03 3.0151e-03 1.2260e-03 4.8823e-03 2.8969e-05 9.5000e-03 1.5342e-02
0:00:58 1381
620 3.0423e-03 2.9636e-03 1.2293e-03 4.8783e-03 2.9136e-05 9.3430e-03 1.5080e-02
0:00:46 1380
621 3.0072e-03 2.9249e-03 1.2297e-03 4.8785e-03 2.9239e-05 9.3777e-03 1.5205e-02
0:00:37 1379
622 2.9649e-03 2.9326e-03 1.2153e-03 4.8295e-03 2.8887e-05 9.6828e-03 1.5754e-02
0:00:30 1378
623 2.9796e-03 2.9569e-03 1.2014e-03 4.7602e-03 2.8710e-05 9.9436e-03 1.6254e-02
0:00:24 1377
624 3.0352e-03 2.9788e-03 1.2039e-03 4.6732e-03 2.9194e-05 9.9050e-03 1.5974e-02
0:00:19 1376
625 3.0014e-03 2.9824e-03 1.2076e-03 4.6164e-03 2.9417e-05 9.7080e-03 1.5471e-02
0:00:15 1375
626 2.9248e-03 2.9660e-03 1.2183e-03 4.5866e-03 2.8581e-05 9.4951e-03 1.5297e-02
0:00:12 1374
627 2.7905e-03 2.9347e-03 1.2129e-03 4.5578e-03 2.7135e-05 9.3657e-03 1.5222e-02
0:00:10 1373

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
628 2.6889e-03 2.8915e-03 1.1891e-03 4.5399e-03 2.5775e-05 9.2479e-03 1.5145e-02
0:00:08 1372
629 2.6154e-03 2.8663e-03 1.1728e-03 4.5093e-03 2.5424e-05 9.1902e-03 1.4988e-02
0:00:06 1371
630 2.6296e-03 2.8457e-03 1.1696e-03 4.4676e-03 2.5745e-05 9.1513e-03 1.4753e-02
0:00:05 1370
631 2.6765e-03 2.8173e-03 1.1695e-03 4.4288e-03 2.6366e-05 8.9311e-03 1.4204e-02
0:00:04 1369
632 2.7468e-03 2.7746e-03 1.1716e-03 4.4293e-03 2.6700e-05 8.6762e-03 1.3753e-02
0:00:03 1368

633 2.7901e-03 2.7203e-03 1.1687e-03 4.4280e-03 2.6771e-05 8.5545e-03 1.3704e-02 0:04:36 1367
634 2.7772e-03 2.6649e-03 1.1567e-03 4.4030e-03 2.6411e-05 8.6553e-03 1.3916e-02 0:03:41 1366
635 2.7169e-03 2.6565e-03 1.1318e-03 4.3453e-03 2.5759e-05 8.8730e-03 1.4334e-02 0:02:56 1365
636 2.6895e-03 2.6585e-03 1.1046e-03 4.2645e-03 2.5955e-05 9.0072e-03 1.4562e-02 0:02:21 1364
637 2.6944e-03 2.6564e-03 1.1009e-03 4.1944e-03 2.6621e-05 8.9502e-03 1.4296e-02 0:01:53 1363
638 2.6692e-03 2.6395e-03 1.1029e-03 4.1479e-03 2.6704e-05 8.7305e-03 1.3918e-02 0:01:30 1362

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
639 2.6205e-03 2.6102e-03 1.1091e-03 4.1289e-03 2.5832e-05 8.6462e-03 1.3905e-02 0:01:12 1361
640 2.5447e-03 2.5798e-03 1.1068e-03 4.1260e-03 2.4551e-05 8.6887e-03 1.4073e-02 0:00:58 1360
641 2.4445e-03 2.5619e-03 1.0885e-03 4.1154e-03 2.3475e-05 8.7638e-03 1.4298e-02 0:00:46 1359
642 2.4102e-03 2.5634e-03 1.0758e-03 4.0713e-03 2.3040e-05 8.8875e-03 1.4487e-02 0:00:37 1358
643 2.4001e-03 2.5588e-03 1.0815e-03 4.0274e-03 2.3442e-05 8.8555e-03 1.4335e-02 0:00:29 1357
644 2.4643e-03 2.5399e-03 1.0790e-03 3.9889e-03 2.4173e-05 8.6266e-03 1.3820e-02 0:00:24 1356
645 2.5177e-03 2.5050e-03 1.0776e-03 3.9983e-03 2.4537e-05 8.3449e-03 1.3275e-02 0:00:19 1355
646 2.5790e-03 2.4508e-03 1.0770e-03 4.0261e-03 2.4595e-05 8.2358e-03 1.3173e-02 0:00:15 1354
647 2.5771e-03 2.4177e-03 1.0666e-03 4.0147e-03 2.3922e-05 8.3572e-03 1.3498e-02 0:00:12 1353
648 2.5476e-03 2.4088e-03 1.0435e-03 3.9764e-03 2.3590e-05 8.4738e-03 1.3945e-02 0:00:10 1352
649 2.5383e-03 2.4072e-03 1.0282e-03 3.9342e-03 2.4143e-05 8.5210e-03 1.4213e-02 0:00:08 1351

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
650 2.5788e-03 2.4108e-03 1.0257e-03 3.9050e-03 2.4726e-05 8.4474e-03 1.4020e-02 0:00:06 1350
651 2.5653e-03 2.4155e-03 1.0395e-03 3.8892e-03 2.4968e-05 8.3342e-03 1.3671e-02 0:00:05 1349
652 2.5294e-03 2.4038e-03 1.0536e-03 3.9229e-03 2.4442e-05 8.3928e-03 1.3715e-02 0:00:04 1348
653 2.4494e-03 2.3979e-03 1.0603e-03 3.9627e-03 2.3649e-05 8.5555e-03 1.4186e-02 0:00:03 1347
654 2.4105e-03 2.4135e-03 1.0488e-03 3.9853e-03 2.2704e-05 8.7825e-03 1.4708e-02 0:00:03 1346
655 2.3463e-03 2.4478e-03 1.0362e-03 3.9851e-03 2.2790e-05 8.9792e-03 1.5058e-02 0:04:31 1345
656 2.3341e-03 2.4763e-03 1.0400e-03 3.9869e-03 2.3262e-05 8.9663e-03 1.4924e-02 0:03:37 1344

657 2.4847e-03 2.4642e-03 1.0395e-03 3.9635e-03 2.3977e-05 8.8664e-03 1.4623e-02 0:02:53 1343
658 2.5562e-03 2.4581e-03 1.0444e-03 4.0102e-03 2.4541e-05 8.6826e-03 1.4135e-02 0:02:18 1342
659 2.6190e-03 2.4284e-03 1.0508e-03 4.0391e-03 2.4607e-05 8.6772e-03 1.3990e-02 0:01:51 1341
660 2.6451e-03 2.4236e-03 1.0421e-03 4.0551e-03 2.4325e-05 8.8147e-03 1.4388e-02 0:01:28 1340

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
661 2.6569e-03 2.4425e-03 1.0333e-03 4.0294e-03 2.4205e-05 9.0234e-03 1.5076e-02 0:01:11 1339
662 2.6343e-03 2.4859e-03 1.0369e-03 4.0184e-03 2.5022e-05 9.0799e-03 1.5382e-02 0:00:57 1338
663 2.7362e-03 2.4851e-03 1.0422e-03 3.9958e-03 2.5982e-05 8.9082e-03 1.5080e-02 0:00:45 1337
664 2.7435e-03 2.5040e-03 1.0647e-03 4.0259e-03 2.6755e-05 8.7174e-03 1.4453e-02 0:00:36 1336
665 2.6962e-03 2.5052e-03 1.0871e-03 4.0751e-03 2.6277e-05 8.6491e-03 1.4254e-02 0:00:29 1335
666 2.5947e-03 2.5013e-03 1.0904e-03 4.1531e-03 2.5382e-05 8.7469e-03 1.4497e-02 0:00:23 1334
667 2.5455e-03 2.5233e-03 1.0742e-03 4.2028e-03 2.4569e-05 8.9339e-03 1.5021e-02 0:00:18 1333
668 2.4405e-03 2.5740e-03 1.0569e-03 4.2434e-03 2.4648e-05 9.0730e-03 1.5379e-02 0:00:15 1332
669 2.5570e-03 2.5580e-03 1.0478e-03 4.2472e-03 2.5169e-05 9.1356e-03 1.5321e-02 0:00:12 1331
670 2.5836e-03 2.6010e-03 1.0629e-03 4.2870e-03 2.5964e-05 8.9776e-03 1.4784e-02 0:00:09 1330
671 2.7368e-03 2.5885e-03 1.0723e-03 4.3254e-03 2.6467e-05 8.8472e-03 1.4463e-02 0:00:08 1329

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
672 2.7880e-03 2.5726e-03 1.0864e-03 4.3587e-03 2.6789e-05 8.8130e-03 1.4337e-02 0:00:06 1328
673 2.8112e-03 2.5921e-03 1.0897e-03 4.3638e-03 2.6811e-05 9.0203e-03 1.4711e-02 0:00:05 1327
674 2.8385e-03 2.6414e-03 1.0909e-03 4.3391e-03 2.6884e-05 9.2836e-03 1.5312e-02 0:00:04 1326
675 2.8973e-03 2.6872e-03 1.0935e-03 4.2876e-03 2.7074e-05 9.4155e-03 1.5565e-02 0:00:03 1325
676 2.9353e-03 2.7110e-03 1.0975e-03 4.2518e-03 2.7552e-05 9.2520e-03 1.5060e-02 0:00:02 1324
677 2.9164e-03 2.7254e-03 1.1176e-03 4.2553e-03 2.7762e-05 9.0872e-03 1.4665e-02 0:00:02 1323
678 2.8219e-03 2.7137e-03 1.1359e-03 4.2815e-03 2.7133e-05 9.0525e-03 1.4630e-02 0:00:02 1322
679 2.6971e-03 2.6997e-03 1.1290e-03 4.3308e-03 2.5924e-05 8.9731e-03 1.4583e-02 0:04:25 1321
680 2.6216e-03 2.6946e-03 1.1092e-03 4.3563e-03 2.5284e-05 8.9636e-03 1.4647e-02 0:03:32 1320

681 2.5218e-03 2.7097e-03 1.0985e-03 4.3837e-03 2.5341e-05 8.8827e-03 1.4553e-02 0:02:50 1319
682 2.6470e-03 2.6798e-03 1.0895e-03 4.3572e-03 2.5740e-05 8.8147e-03 1.4306e-02 0:02:16 1318

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
683 2.7012e-03 2.6863e-03 1.1001e-03 4.3674e-03 2.6286e-05 8.6142e-03 1.3800e-02 0:01:48 1317
684 2.7646e-03 2.6613e-03 1.1039e-03 4.3949e-03 2.6335e-05 8.4171e-03 1.3443e-02 0:01:27 1316
685 2.7586e-03 2.6218e-03 1.1025e-03 4.3989e-03 2.6328e-05 8.3671e-03 1.3337e-02 0:01:09 1315
686 2.7101e-03 2.6282e-03 1.0956e-03 4.3566e-03 2.6147e-05 8.5485e-03 1.3699e-02 0:00:55 1314
687 2.7251e-03 2.6619e-03 1.0894e-03 4.2993e-03 2.5940e-05 8.8287e-03 1.4209e-02 0:00:44 1313
688 2.7739e-03 2.6943e-03 1.0902e-03 4.2298e-03 2.6006e-05 8.8601e-03 1.4151e-02 0:00:35 1312
689 2.8070e-03 2.7028e-03 1.0905e-03 4.1684e-03 2.6404e-05 8.7292e-03 1.3707e-02 0:00:28 1311
690 2.7366e-03 2.6885e-03 1.1001e-03 4.1277e-03 2.6034e-05 8.6322e-03 1.3561e-02 0:00:23 1310
691 2.6212e-03 2.6575e-03 1.0999e-03 4.1093e-03 2.5005e-05 8.4836e-03 1.3427e-02 0:00:18 1309
692 2.4974e-03 2.6269e-03 1.0827e-03 4.0884e-03 2.3861e-05 8.3438e-03 1.3262e-02 0:00:14 1308
693 2.4062e-03 2.5984e-03 1.0664e-03 4.0704e-03 2.3462e-05 8.2470e-03 1.3095e-02 0:00:12 1307

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
694 2.3922e-03 2.5807e-03 1.0662e-03 4.0347e-03 2.3634e-05 8.1614e-03 1.2841e-02 0:00:09 1306
695 2.4587e-03 2.5537e-03 1.0688e-03 4.0078e-03 2.3964e-05 8.0180e-03 1.2484e-02 0:00:07 1305
696 2.5134e-03 2.5109e-03 1.0711e-03 4.0009e-03 2.4254e-05 7.7698e-03 1.2125e-02 0:00:06 1304
697 2.5453e-03 2.4641e-03 1.0634e-03 4.0040e-03 2.4139e-05 7.5665e-03 1.1820e-02 0:00:05 1303
698 2.5265e-03 2.4127e-03 1.0507e-03 3.9701e-03 2.3895e-05 7.6028e-03 1.1891e-02 0:00:04 1302
699 2.4440e-03 2.3942e-03 1.0209e-03 3.9152e-03 2.3260e-05 7.8031e-03 1.2241e-02 0:04:23 1301
700 2.4131e-03 2.3981e-03 9.9859e-04 3.8348e-03 2.3061e-05 7.9731e-03 1.2579e-02 0:03:30 1300
701 2.4528e-03 2.3950e-03 9.9154e-04 3.7557e-03 2.3400e-05 7.9214e-03 1.2326e-02 0:02:48 1299
702 2.4571e-03 2.3809e-03 9.9233e-04 3.6952e-03 2.3731e-05 7.7896e-03 1.1972e-02 0:02:14 1298
703 2.4227e-03 2.3529e-03 1.0003e-03 3.6611e-03 2.3150e-05 7.6496e-03 1.1912e-02 0:01:47 1297
704 2.3141e-03 2.3239e-03 9.9217e-04 3.6327e-03 2.2098e-05 7.5979e-03 1.1874e-02 0:01:26 1296

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
705 2.1982e-03 2.2947e-03 9.7436e-04 3.6102e-03 2.1063e-05 7.5742e-03 1.1962e-02 0:01:09 1295
706 2.1311e-03 2.2790e-03 9.6234e-04 3.5674e-03 2.0722e-05 7.6244e-03 1.2036e-02 0:00:55 1294
707 2.1247e-03 2.2754e-03 9.7264e-04 3.5246e-03 2.0920e-05 7.5761e-03 1.1873e-02 0:00:44 1293
708 2.1800e-03 2.2487e-03 9.7061e-04 3.4855e-03 2.1195e-05 7.3850e-03 1.1418e-02 0:00:35 1292
709 2.2408e-03 2.2128e-03 9.7228e-04 3.4961e-03 2.1272e-05 7.1108e-03 1.0993e-02 0:00:28 1291
710 2.2549e-03 2.1581e-03 9.6486e-04 3.5082e-03 2.1261e-05 7.0115e-03 1.0882e-02 0:00:22 1290
711 2.2296e-03 2.1159e-03 9.4831e-04 3.4866e-03 2.0686e-05 7.0668e-03 1.1020e-02 0:00:18 1289
712 2.2019e-03 2.0994e-03 9.1875e-04 3.4336e-03 2.0179e-05 7.2095e-03 1.1386e-02 0:00:14 1288
713 2.2142e-03 2.0989e-03 9.0021e-04 3.3865e-03 2.0373e-05 7.2890e-03 1.1666e-02 0:00:11 1287
714 2.2437e-03 2.0953e-03 8.9399e-04 3.3390e-03 2.0952e-05 7.2122e-03 1.1437e-02 0:00:09 1286
715 2.2300e-03 2.0894e-03 9.0701e-04 3.3136e-03 2.1298e-05 7.0552e-03 1.1079e-02 0:00:07 1285

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
716 2.2115e-03 2.0702e-03 9.1355e-04 3.3065e-03 2.0859e-05 6.9869e-03 1.0933e-02 0:00:06 1284
717 2.1162e-03 2.0427e-03 9.1415e-04 3.3179e-03 2.0232e-05 7.0748e-03 1.1224e-02 0:00:05 1283
718 2.0384e-03 2.0498e-03 9.0131e-04 3.3254e-03 1.9434e-05 7.2150e-03 1.1657e-02 0:00:04 1282
719 1.9961e-03 2.0736e-03 8.8868e-04 3.3086e-03 1.9360e-05 7.3955e-03 1.1967e-02 0:00:03 1281
720 2.0086e-03 2.0830e-03 8.9548e-04 3.2863e-03 1.9734e-05 7.4222e-03 1.1921e-02 0:00:02 1280
721 2.0836e-03 2.0779e-03 8.9443e-04 3.2814e-03 2.0270e-05 7.2712e-03 1.1541e-02 0:00:02 1279
722 2.1429e-03 2.0597e-03 8.9907e-04 3.3165e-03 2.0471e-05 7.1165e-03 1.1197e-02 0:00:02 1278
723 2.1748e-03 2.0231e-03 9.0108e-04 3.3343e-03 2.0360e-05 7.1155e-03 1.1181e-02 0:04:17 1277
724 2.1850e-03 2.0070e-03 8.8669e-04 3.3369e-03 2.0013e-05 7.2536e-03 1.1504e-02 0:03:25 1276
725 2.2053e-03 2.0127e-03 8.7027e-04 3.2966e-03 1.9675e-05 7.4113e-03 1.1934e-02 0:02:44 1275
726 2.2011e-03 2.0393e-03 8.6641e-04 3.2679e-03 2.0096e-05 7.4464e-03 1.2133e-02 0:02:11 1274

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
727 2.2866e-03 2.0372e-03 8.7156e-04 3.2418e-03 2.0955e-05 7.2955e-03 1.1928e-02 0:01:45 1273

728 2.2747e-03 2.0455e-03 8.8968e-04 3.2589e-03 2.1355e-05 7.0739e-03 1.1416e-02 0:01:24 1272
729 2.2402e-03 2.0335e-03 9.0506e-04 3.2874e-03 2.1170e-05 6.9514e-03 1.1052e-02 0:01:07 1271
730 2.1528e-03 2.0236e-03 9.0268e-04 3.3414e-03 2.0744e-05 7.0257e-03 1.1229e-02 0:00:54 1270
731 2.0905e-03 2.0340e-03 8.8413e-04 3.3725e-03 2.0377e-05 7.1625e-03 1.1685e-02 0:00:43 1269
732 2.0235e-03 2.0766e-03 8.7776e-04 3.4092e-03 2.0320e-05 7.3057e-03 1.2021e-02 0:00:34 1268
733 2.1201e-03 2.0705e-03 8.7391e-04 3.4051e-03 2.0737e-05 7.3925e-03 1.2069e-02 0:00:27 1267
734 2.1409e-03 2.1025e-03 8.8330e-04 3.4459e-03 2.1335e-05 7.2817e-03 1.1750e-02 0:00:22 1266
735 2.2558e-03 2.0876e-03 8.8731e-04 3.4789e-03 2.1650e-05 7.2007e-03 1.1537e-02 0:00:17 1265
736 2.2906e-03 2.0737e-03 8.9577e-04 3.5098e-03 2.1700e-05 7.2503e-03 1.1533e-02 0:00:14 1264
737 2.3025e-03 2.0922e-03 8.9696e-04 3.5068e-03 2.1712e-05 7.3944e-03 1.1823e-02 0:00:11 1263

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
738 2.2904e-03 2.1461e-03 9.0307e-04 3.4889e-03 2.1826e-05 7.5236e-03 1.2131e-02 0:00:09 1262
739 2.3919e-03 2.1592e-03 8.9913e-04 3.4406e-03 2.1855e-05 7.5736e-03 1.2198e-02 0:00:07 1261
740 2.4297e-03 2.1869e-03 9.0560e-04 3.4121e-03 2.2183e-05 7.4507e-03 1.1892e-02 0:00:06 1260
741 2.4186e-03 2.1964e-03 9.2046e-04 3.4204e-03 2.2500e-05 7.3274e-03 1.1649e-02 0:00:05 1259
742 2.3665e-03 2.1796e-03 9.3248e-04 3.4508e-03 2.2127e-05 7.2905e-03 1.1568e-02 0:00:04 1258
743 2.2646e-03 2.1629e-03 9.2343e-04 3.4869e-03 2.1320e-05 7.2269e-03 1.1488e-02 0:04:14 1257
744 2.1874e-03 2.1603e-03 9.0948e-04 3.5025e-03 2.1091e-05 7.2560e-03 1.1577e-02 0:03:23 1256
745 2.1155e-03 2.1728e-03 9.0430e-04 3.5353e-03 2.1072e-05 7.2075e-03 1.1470e-02 0:02:43 1255
746 2.2275e-03 2.1510e-03 8.9969e-04 3.5267e-03 2.1410e-05 7.1386e-03 1.1323e-02 0:02:10 1254
747 2.2767e-03 2.1538e-03 9.0879e-04 3.5522e-03 2.1691e-05 7.0209e-03 1.1130e-02 0:01:44 1253
748 2.3391e-03 2.1333e-03 9.0924e-04 3.5688e-03 2.1776e-05 6.8355e-03 1.0776e-02 0:01:23 1252

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
749 2.3173e-03 2.1177e-03 9.0753e-04 3.5678e-03 2.1658e-05 6.8196e-03 1.0631e-02 0:01:06 1251
750 2.2827e-03 2.1367e-03 8.9882e-04 3.5435e-03 2.1359e-05 6.9194e-03 1.0800e-02 0:00:53 1250
751 2.2816e-03 2.1750e-03 9.0292e-04 3.4872e-03 2.1336e-05 7.0405e-03 1.0978e-02 0:00:42 1249

752 2.3407e-03 2.1982e-03 9.0285e-04 3.4265e-03 2.1373e-05 7.0968e-03 1.0961e-02 0:00:34 1248
753 2.3439e-03 2.2057e-03 9.0344e-04 3.3763e-03 2.1538e-05 6.9981e-03 1.0788e-02 0:00:27 1247
754 2.3085e-03 2.1842e-03 9.0600e-04 3.3469e-03 2.1221e-05 6.9465e-03 1.0620e-02 0:00:22 1246
755 2.2076e-03 2.1551e-03 9.0473e-04 3.3286e-03 2.0485e-05 6.9087e-03 1.0559e-02 0:00:17 1245
756 2.1125e-03 2.1276e-03 8.8999e-04 3.3149e-03 1.9893e-05 6.7718e-03 1.0391e-02 0:00:14 1244
757 2.0438e-03 2.1062e-03 8.8537e-04 3.2900e-03 1.9715e-05 6.6950e-03 1.0214e-02 0:00:11 1243
758 2.0445e-03 2.0934e-03 8.8166e-04 3.2648e-03 1.9758e-05 6.6009e-03 1.0029e-02 0:00:09 1242
759 2.0771e-03 2.0696e-03 8.8942e-04 3.2498e-03 1.9911e-05 6.4590e-03 9.8269e-03 0:00:07 1241

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
760 2.1336e-03 2.0367e-03 8.9225e-04 3.2551e-03 1.9873e-05 6.2168e-03 9.5395e-03 0:00:06 1240
761 2.1309e-03 1.9902e-03 8.7996e-04 3.2422e-03 1.9733e-05 6.0636e-03 9.1902e-03 0:00:05 1239
762 2.0756e-03 1.9539e-03 8.6200e-04 3.2089e-03 1.9370e-05 6.0434e-03 9.1722e-03 0:00:04 1238
763 2.0439e-03 1.9482e-03 8.3325e-04 3.1461e-03 1.8811e-05 6.1860e-03 9.3900e-03 0:00:03 1237
764 2.0010e-03 1.9570e-03 8.2134e-04 3.0684e-03 1.8540e-05 6.2492e-03 9.4535e-03 0:04:10 1236
765 2.0326e-03 1.9448e-03 8.1211e-04 3.0048e-03 1.8701e-05 6.1976e-03 9.3313e-03 0:03:19 1235
766 2.0312e-03 1.9254e-03 8.1518e-04 2.9457e-03 1.8741e-05 6.1225e-03 9.1568e-03 0:02:39 1234
767 1.9852e-03 1.8900e-03 8.1353e-04 2.8960e-03 1.8221e-05 6.0306e-03 9.0448e-03 0:02:07 1233
768 1.8811e-03 1.8598e-03 8.0396e-04 2.8661e-03 1.7560e-05 5.9186e-03 8.9096e-03 0:01:42 1232
769 1.7826e-03 1.8359e-03 7.8960e-04 2.8283e-03 1.7042e-05 5.8410e-03 8.8350e-03 0:01:21 1231
770 1.7331e-03 1.8212e-03 7.8989e-04 2.7804e-03 1.6974e-05 5.8511e-03 8.8070e-03 0:01:05 1230

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
771 1.7525e-03 1.8112e-03 7.9719e-04 2.7452e-03 1.7160e-05 5.7623e-03 8.6236e-03 0:00:52 1229
772 1.7920e-03 1.7770e-03 8.0146e-04 2.7299e-03 1.7037e-05 5.5479e-03 8.2559e-03 0:00:42 1228
773 1.8040e-03 1.7355e-03 7.9280e-04 2.7278e-03 1.6724e-05 5.3793e-03 8.0258e-03 0:00:33 1227
774 1.7767e-03 1.6819e-03 7.7675e-04 2.7103e-03 1.6359e-05 5.3371e-03 7.9169e-03 0:00:27 1226
775 1.7502e-03 1.6442e-03 7.5400e-04 2.6689e-03 1.5787e-05 5.3929e-03 8.0860e-03 0:00:21 1225

776 1.7275e-03 1.6315e-03 7.2508e-04 2.6107e-03 1.5393e-05 5.4781e-03 8.3589e-03 0:00:17 1224
777 1.7550e-03 1.6222e-03 7.1263e-04 2.5602e-03 1.5568e-05 5.4790e-03 8.3650e-03 0:00:14 1223
778 1.7709e-03 1.6091e-03 7.1518e-04 2.5146e-03 1.5747e-05 5.3867e-03 8.1239e-03 0:00:11 1222
779 1.7434e-03 1.5851e-03 7.1768e-04 2.4855e-03 1.5794e-05 5.2570e-03 7.8957e-03 0:00:09 1221
780 1.6966e-03 1.5588e-03 7.1559e-04 2.4685e-03 1.5486e-05 5.1756e-03 7.7557e-03 0:00:07 1220
781 1.6109e-03 1.5494e-03 7.0608e-04 2.4527e-03 1.5072e-05 5.1805e-03 7.8223e-03 0:00:06 1219

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
782 1.5432e-03 1.5549e-03 6.9457e-04 2.4296e-03 1.4803e-05 5.2633e-03 8.0124e-03 0:00:04 1218
783 1.5222e-03 1.5582e-03 6.9617e-04 2.4031e-03 1.4891e-05 5.3437e-03 8.1406e-03 0:00:04 1217
784 1.5591e-03 1.5545e-03 6.9818e-04 2.3893e-03 1.5047e-05 5.2899e-03 8.0199e-03 0:00:03 1216
785 1.6131e-03 1.5394e-03 6.9609e-04 2.3927e-03 1.5076e-05 5.1481e-03 7.7915e-03 0:00:02 1215
786 1.6327e-03 1.5076e-03 6.9042e-04 2.4033e-03 1.5053e-05 5.1009e-03 7.6760e-03 0:00:02 1214
787 1.6159e-03 1.4773e-03 6.8302e-04 2.3913e-03 1.4838e-05 5.1871e-03 7.8297e-03 0:04:04 1213
788 1.6286e-03 1.4642e-03 6.6513e-04 2.3629e-03 1.4495e-05 5.3126e-03 8.1014e-03 0:03:15 1212
789 1.6681e-03 1.4611e-03 6.5624e-04 2.3181e-03 1.4254e-05 5.3771e-03 8.3111e-03 0:02:36 1211
790 1.6969e-03 1.4644e-03 6.5387e-04 2.2909e-03 1.4560e-05 5.2656e-03 8.1654e-03 0:02:05 1210
791 1.7031e-03 1.4584e-03 6.5917e-04 2.2813e-03 1.4887e-05 5.0734e-03 7.8575e-03 0:01:40 1209
792 1.6707e-03 1.4505e-03 6.6824e-04 2.2896e-03 1.4794e-05 4.8829e-03 7.5156e-03 0:01:20 1208

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
793 1.6124e-03 1.4241e-03 6.6680e-04 2.3067e-03 1.4755e-05 4.7866e-03 7.3208e-03 0:01:04 1207
794 1.5422e-03 1.4218e-03 6.5012e-04 2.3155e-03 1.4413e-05 4.7996e-03 7.3694e-03 0:00:51 1206
795 1.4981e-03 1.4374e-03 6.3878e-04 2.3226e-03 1.4393e-05 4.9234e-03 7.6845e-03 0:00:41 1205
796 1.5164e-03 1.4460e-03 6.3825e-04 2.3309e-03 1.4642e-05 5.0353e-03 7.8871e-03 0:00:33 1204
797 1.5624e-03 1.4485e-03 6.3981e-04 2.3486e-03 1.4924e-05 5.0076e-03 7.8293e-03 0:00:26 1203
798 1.6198e-03 1.4440e-03 6.4301e-04 2.3731e-03 1.5116e-05 4.9493e-03 7.6635e-03 0:00:21 1202
799 1.6298e-03 1.4349e-03 6.4468e-04 2.3822e-03 1.5141e-05 4.9971e-03 7.6576e-03 0:00:17 1201

800 1.6205e-03 1.4414e-03 6.4291e-04 2.3810e-03 1.4864e-05 5.1130e-03 7.8461e-03 0:00:13 1200
801 1.6444e-03 1.4577e-03 6.4243e-04 2.3592e-03 1.4821e-05 5.1893e-03 8.0037e-03 0:00:11 1199
802 1.6964e-03 1.4745e-03 6.4368e-04 2.3253e-03 1.4904e-05 5.2022e-03 7.9382e-03 0:00:08 1198
803 1.7364e-03 1.4924e-03 6.4453e-04 2.2924e-03 1.5017e-05 5.0882e-03 7.7466e-03 0:00:07 1197

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
804 1.7424e-03 1.4929e-03 6.4949e-04 2.2843e-03 1.5297e-05 4.9750e-03 7.6557e-03 0:00:05 1196
805 1.6908e-03 1.4835e-03 6.5182e-04 2.3002e-03 1.5203e-05 4.8792e-03 7.5200e-03 0:00:04 1195
806 1.6477e-03 1.4608e-03 6.4758e-04 2.3173e-03 1.4825e-05 4.8802e-03 7.4571e-03 0:00:03 1194
807 1.5888e-03 1.4448e-03 6.3394e-04 2.3232e-03 1.4590e-05 4.8696e-03 7.4420e-03 0:00:03 1193
808 1.5509e-03 1.4385e-03 6.2758e-04 2.3333e-03 1.4632e-05 4.8581e-03 7.3958e-03 0:04:01 1192
809 1.5588e-03 1.4357e-03 6.2620e-04 2.3406e-03 1.4742e-05 4.7597e-03 7.2886e-03 0:03:12 1191
810 1.6186e-03 1.4309e-03 6.3802e-04 2.3562e-03 1.4878e-05 4.6496e-03 7.1780e-03 0:02:34 1190
811 1.6389e-03 1.4184e-03 6.3689e-04 2.3683e-03 1.4918e-05 4.5670e-03 7.0303e-03 0:02:03 1189
812 1.6373e-03 1.4100e-03 6.3233e-04 2.3654e-03 1.4815e-05 4.5330e-03 6.8466e-03 0:01:38 1188
813 1.6233e-03 1.4294e-03 6.2212e-04 2.3368e-03 1.4559e-05 4.5399e-03 6.8115e-03 0:01:19 1187
814 1.5988e-03 1.4576e-03 6.2191e-04 2.2970e-03 1.4472e-05 4.5574e-03 6.8207e-03 0:01:03 1186

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
815 1.6309e-03 1.4670e-03 6.2219e-04 2.2618e-03 1.4514e-05 4.5554e-03 6.7617e-03 0:00:50 1185
816 1.6542e-03 1.4722e-03 6.2130e-04 2.2212e-03 1.4505e-05 4.5271e-03 6.6784e-03 0:00:40 1184
817 1.6208e-03 1.4580e-03 6.2247e-04 2.1844e-03 1.4370e-05 4.5031e-03 6.6293e-03 0:00:32 1183
818 1.5541e-03 1.4355e-03 6.1491e-04 2.1623e-03 1.3941e-05 4.5465e-03 6.6479e-03 0:00:26 1182
819 1.4944e-03 1.4101e-03 6.0716e-04 2.1447e-03 1.3659e-05 4.5234e-03 6.6711e-03 0:00:20 1181
820 1.4456e-03 1.3832e-03 6.0445e-04 2.1199e-03 1.3678e-05 4.4694e-03 6.6004e-03 0:00:16 1180
821 1.4372e-03 1.3701e-03 6.0456e-04 2.0986e-03 1.3631e-05 4.3640e-03 6.4583e-03 0:00:13 1179
822 1.4648e-03 1.3503e-03 6.1250e-04 2.0918e-03 1.3451e-05 4.1943e-03 6.2563e-03 0:00:10 1178
823 1.4874e-03 1.3236e-03 6.1621e-04 2.0870e-03 1.3190e-05 4.0022e-03 6.0079e-03 0:00:08 1177

824 1.4686e-03 1.2879e-03 6.0481e-04 2.0747e-03 1.2917e-05 3.8675e-03 5.7127e-03 0:00:07 1176
825 1.4276e-03 1.2690e-03 5.8593e-04 2.0434e-03 1.2638e-05 3.8313e-03 5.5774e-03 0:00:05 1175

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
826 1.3690e-03 1.2641e-03 5.6004e-04 1.9934e-03 1.2154e-05 3.8295e-03 5.5687e-03 0:00:04 1174
827 1.3401e-03 1.2641e-03 5.4759e-04 1.9375e-03 1.1891e-05 3.8323e-03 5.5740e-03 0:00:03 1173
828 1.3572e-03 1.2486e-03 5.4137e-04 1.8800e-03 1.1979e-05 3.7618e-03 5.4431e-03 0:00:03 1172
829 1.3412e-03 1.2277e-03 5.3837e-04 1.8288e-03 1.1740e-05 3.6985e-03 5.2581e-03 0:00:02 1171
830 1.3058e-03 1.1958e-03 5.3261e-04 1.7865e-03 1.1483e-05 3.6498e-03 5.2111e-03 0:00:02 1170
831 1.2284e-03 1.1647e-03 5.2395e-04 1.7483e-03 1.1087e-05 3.5911e-03 5.1971e-03 0:03:55 1169
832 1.1566e-03 1.1472e-03 5.1634e-04 1.7079e-03 1.1027e-05 3.5248e-03 5.1150e-03 0:03:08 1168
833 1.1368e-03 1.1309e-03 5.1423e-04 1.6674e-03 1.1029e-05 3.4928e-03 5.0207e-03 0:02:30 1167
834 1.1414e-03 1.1170e-03 5.2140e-04 1.6374e-03 1.0930e-05 3.3766e-03 4.8418e-03 0:02:00 1166
835 1.1615e-03 1.0932e-03 5.2308e-04 1.6247e-03 1.0677e-05 3.2178e-03 4.6042e-03 0:01:36 1165
836 1.1502e-03 1.0557e-03 5.1432e-04 1.6107e-03 1.0269e-05 3.1352e-03 4.4501e-03 0:01:17 1164

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
837 1.1149e-03 1.0127e-03 4.9656e-04 1.5829e-03 9.7871e-06 3.1068e-03 4.3810e-03 0:01:01 1163
838 1.0758e-03 9.7879e-04 4.7334e-04 1.5423e-03 9.3050e-06 3.1321e-03 4.4697e-03 0:00:49 1162
839 1.0480e-03 9.6123e-04 4.5484e-04 1.4961e-03 9.0043e-06 3.1433e-03 4.5718e-03 0:00:39 1161
840 1.0628e-03 9.4298e-04 4.4464e-04 1.4548e-03 9.0357e-06 3.0821e-03 4.4669e-03 0:00:31 1160
841 1.0721e-03 9.2494e-04 4.4294e-04 1.4147e-03 8.9100e-06 2.9772e-03 4.2838e-03 0:00:25 1159
842 1.0446e-03 9.0342e-04 4.3902e-04 1.3809e-03 8.7033e-06 2.8197e-03 4.0531e-03 0:00:20 1158
843 9.9163e-04 8.7537e-04 4.2956e-04 1.3540e-03 8.5879e-06 2.7568e-03 3.9537e-03 0:00:16 1157
844 9.2591e-04 8.7241e-04 4.1873e-04 1.3232e-03 8.4195e-06 2.7219e-03 3.9043e-03 0:00:13 1156
845 8.8955e-04 8.7492e-04 4.1237e-04 1.2928e-03 8.4985e-06 2.7398e-03 3.9128e-03 0:00:10 1155
846 8.8613e-04 8.7217e-04 4.1063e-04 1.2742e-03 8.5430e-06 2.7340e-03 3.8919e-03 0:00:08 1154
847 9.1952e-04 8.6145e-04 4.0978e-04 1.2624e-03 8.4562e-06 2.6745e-03 3.7732e-03 0:00:07 1153

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
848 9.3831e-04 8.4315e-04 4.0509e-04 1.2572e-03 8.2892e-06 2.6564e-03 3.7700e-03 0:00:05 1152
849 9.2977e-04 8.1292e-04 3.9781e-04 1.2397e-03 8.0406e-06 2.7270e-03 3.8447e-03 0:00:04 1151
850 9.2125e-04 7.8707e-04 3.8643e-04 1.2172e-03 7.7300e-06 2.7756e-03 3.9835e-03 0:00:03 1150
851 9.0874e-04 7.7298e-04 3.7619e-04 1.1840e-03 7.3833e-06 2.8221e-03 4.1008e-03 0:00:03 1149
852 9.2412e-04 7.6018e-04 3.6719e-04 1.1521e-03 7.2236e-06 2.7988e-03 4.0871e-03 0:03:52 1148
853 9.3478e-04 7.4524e-04 3.6556e-04 1.1269e-03 7.2438e-06 2.6639e-03 3.9160e-03 0:03:05 1147
854 9.1575e-04 7.3186e-04 3.6705e-04 1.1115e-03 7.1505e-06 2.4806e-03 3.6570e-03 0:02:28 1146
855 8.7931e-04 7.1058e-04 3.6184e-04 1.1008e-03 7.0577e-06 2.3346e-03 3.4437e-03 0:01:58 1145
856 8.2972e-04 6.9641e-04 3.5140e-04 1.0898e-03 6.9275e-06 2.2348e-03 3.2889e-03 0:01:35 1144
857 7.8396e-04 6.9212e-04 3.3776e-04 1.0780e-03 6.8383e-06 2.1828e-03 3.2405e-03 0:01:16 1143
858 7.7137e-04 6.8807e-04 3.2776e-04 1.0707e-03 6.9187e-06 2.2087e-03 3.2713e-03 0:01:00 1142

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
859 7.9054e-04 6.8550e-04 3.2470e-04 1.0666e-03 6.9738e-06 2.2232e-03 3.2919e-03 0:00:48 1141
860 8.1104e-04 6.7781e-04 3.2477e-04 1.0692e-03 7.0318e-06 2.2361e-03 3.3081e-03 0:00:39 1140
861 8.1575e-04 6.6653e-04 3.2110e-04 1.0672e-03 7.0654e-06 2.2956e-03 3.3644e-03 0:00:31 1139
862 8.2001e-04 6.6343e-04 3.1803e-04 1.0580e-03 6.9914e-06 2.3717e-03 3.4637e-03 0:00:25 1138
863 8.1738e-04 6.7055e-04 3.1376e-04 1.0406e-03 6.9436e-06 2.4150e-03 3.5643e-03 0:00:20 1137
864 8.4082e-04 6.7771e-04 3.1396e-04 1.0189e-03 6.9237e-06 2.4003e-03 3.5190e-03 0:00:16 1136
865 8.6918e-04 6.7833e-04 3.1328e-04 1.0006e-03 6.9348e-06 2.2984e-03 3.3126e-03 0:00:13 1135
866 8.8377e-04 6.7321e-04 3.1279e-04 9.8388e-04 6.8612e-06 2.1723e-03 3.1048e-03 0:00:10 1134
867 8.5048e-04 6.6167e-04 3.1267e-04 9.7228e-04 6.7715e-06 2.0793e-03 2.9915e-03 0:00:08 1133
868 8.0422e-04 6.4100e-04 3.0685e-04 9.7118e-04 6.5314e-06 2.0673e-03 2.9917e-03 0:00:06 1132
869 7.6446e-04 6.2240e-04 2.9523e-04 9.6773e-04 6.3796e-06 2.0738e-03 3.0176e-03 0:00:05 1131

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
870 7.4724e-04 6.0491e-04 2.8624e-04 9.6441e-04 6.3553e-06 2.0608e-03 3.0345e-03 0:00:04 1130

871 7.4155e-04 5.9350e-04 2.8445e-04 9.6390e-04 6.3065e-06 1.9939e-03 2.9671e-03 0:00:03 1129
872 7.5585e-04 5.8899e-04 2.8838e-04 9.6324e-04 6.2942e-06 1.9404e-03 2.9086e-03 0:03:48 1128
873 7.5986e-04 5.8340e-04 2.9038e-04 9.6178e-04 6.3441e-06 1.8938e-03 2.8360e-03 0:03:02 1127
874 7.4460e-04 5.8281e-04 2.8732e-04 9.5728e-04 6.3708e-06 1.8615e-03 2.7428e-03 0:02:26 1126
875 7.2363e-04 5.9314e-04 2.7929e-04 9.4484e-04 6.2828e-06 1.8369e-03 2.6623e-03 0:01:57 1125
876 7.1554e-04 6.0634e-04 2.7363e-04 9.2053e-04 6.2793e-06 1.8046e-03 2.6069e-03 0:01:33 1124
877 7.2631e-04 6.1446e-04 2.7182e-04 9.0124e-04 6.2871e-06 1.7644e-03 2.5175e-03 0:01:14 1123
878 7.4270e-04 6.1392e-04 2.6972e-04 8.8396e-04 6.2665e-06 1.7473e-03 2.4084e-03 0:01:00 1122
879 7.3034e-04 6.0287e-04 2.6774e-04 8.6133e-04 6.1645e-06 1.7564e-03 2.4031e-03 0:00:48 1121
880 6.9448e-04 5.8776e-04 2.6484e-04 8.4223e-04 5.8692e-06 1.8156e-03 2.5323e-03 0:00:38 1120

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
881 6.6182e-04 5.6879e-04 2.6177e-04 8.2524e-04 5.7581e-06 1.8724e-03 2.6894e-03 0:00:30 1119
882 6.4595e-04 5.5119e-04 2.6023e-04 8.1146e-04 5.7721e-06 1.8903e-03 2.7524e-03 0:00:24 1118
883 6.4599e-04 5.4083e-04 2.6328e-04 8.0372e-04 5.6992e-06 1.8273e-03 2.7003e-03 0:00:19 1117
884 6.6179e-04 5.3248e-04 2.6620e-04 7.9809e-04 5.5818e-06 1.7357e-03 2.5640e-03 0:00:16 1116
885 6.6119e-04 5.1862e-04 2.6624e-04 7.9215e-04 5.4084e-06 1.6344e-03 2.4394e-03 0:00:12 1115
886 6.3025e-04 5.0272e-04 2.6044e-04 7.8299e-04 5.2466e-06 1.5505e-03 2.2863e-03 0:00:10 1114
887 5.9559e-04 4.9216e-04 2.4943e-04 7.6705e-04 5.0292e-06 1.4899e-03 2.1588e-03 0:00:08 1113
888 5.6573e-04 4.8862e-04 2.3419e-04 7.4455e-04 4.8206e-06 1.4348e-03 2.0467e-03 0:00:06 1112
889 5.5343e-04 4.8407e-04 2.2305e-04 7.2080e-04 4.6789e-06 1.3683e-03 1.9152e-03 0:00:05 1111
890 5.5993e-04 4.7433e-04 2.1681e-04 6.9521e-04 4.6632e-06 1.3177e-03 1.7961e-03 0:00:04 1110
891 5.4848e-04 4.5990e-04 2.1258e-04 6.6840e-04 4.5451e-06 1.2685e-03 1.6877e-03 0:00:03 1109

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
892 5.1680e-04 4.4429e-04 2.0661e-04 6.4368e-04 4.3318e-06 1.2726e-03 1.7348e-03 0:00:03 1108
893 4.8382e-04 4.2913e-04 2.0428e-04 6.1995e-04 4.2443e-06 1.2918e-03 1.8063e-03 0:00:02 1107
894 4.6588e-04 4.2209e-04 2.0289e-04 6.0075e-04 4.2759e-06 1.2935e-03 1.8551e-03 0:00:02 1106

895 4.6935e-04 4.1744e-04 2.0397e-04 5.8570e-04 4.2572e-06 1.2560e-03 1.8075e-03 0:03:42 1105
896 4.8109e-04 4.1406e-04 2.0602e-04 5.7544e-04 4.2103e-06 1.1927e-03 1.6891e-03 0:02:58 1104
897 4.8551e-04 4.0193e-04 2.0599e-04 5.6608e-04 4.0288e-06 1.1536e-03 1.6350e-03 0:02:22 1103
898 4.6655e-04 3.8266e-04 2.0071e-04 5.5741e-04 3.7865e-06 1.1465e-03 1.6138e-03 0:01:54 1102
899 4.3514e-04 3.6292e-04 1.9289e-04 5.4567e-04 3.5101e-06 1.1481e-03 1.6014e-03 0:01:31 1101
900 4.0758e-04 3.4892e-04 1.8278e-04 5.3004e-04 3.2539e-06 1.1383e-03 1.5864e-03 0:01:13 1100
901 4.0090e-04 3.3486e-04 1.7435e-04 5.1334e-04 3.1216e-06 1.1080e-03 1.5506e-03 0:00:58 1099
902 4.0933e-04 3.2177e-04 1.6902e-04 4.9649e-04 3.1074e-06 1.0426e-03 1.4403e-03 0:00:46 1098

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
903 4.0782e-04 3.1235e-04 1.6660e-04 4.7799e-04 3.0897e-06 9.4825e-04 1.2927e-03 0:00:37 1097
904 3.8333e-04 3.0254e-04 1.6252e-04 4.6036e-04 3.0127e-06 8.7668e-04 1.2086e-03 0:00:30 1096
905 3.5133e-04 2.9420e-04 1.5522e-04 4.4465e-04 2.9307e-06 8.5269e-04 1.1899e-03 0:00:24 1095
906 3.3436e-04 2.9399e-04 1.4947e-04 4.3028e-04 2.9364e-06 8.3840e-04 1.1922e-03 0:00:19 1094
907 3.3405e-04 2.9560e-04 1.4475e-04 4.1815e-04 2.9561e-06 8.3767e-04 1.1899e-03 0:00:15 1093
908 3.4526e-04 2.9658e-04 1.4215e-04 4.0857e-04 2.9633e-06 8.4189e-04 1.1528e-03 0:00:12 1092
909 3.5412e-04 2.9020e-04 1.4203e-04 4.0035e-04 2.8673e-06 8.7292e-04 1.1799e-03 0:00:10 1091
910 3.5226e-04 2.7862e-04 1.4011e-04 3.9102e-04 2.7037e-06 9.1328e-04 1.2360e-03 0:00:08 1090
911 3.4304e-04 2.6568e-04 1.3635e-04 3.8154e-04 2.5512e-06 9.5742e-04 1.3288e-03 0:00:06 1089
912 3.3769e-04 2.5613e-04 1.3257e-04 3.6898e-04 2.4123e-06 9.8223e-04 1.4012e-03 0:00:05 1088
913 3.3796e-04 2.4720e-04 1.3144e-04 3.5851e-04 2.3213e-06 9.7881e-04 1.4134e-03 0:03:41 1087

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
914 3.4476e-04 2.3792e-04 1.3076e-04 3.4827e-04 2.2964e-06 9.3065e-04 1.3331e-03 0:02:57 1086
915 3.4076e-04 2.2944e-04 1.3088e-04 3.3583e-04 2.2576e-06 8.5293e-04 1.2103e-03 0:02:21 1085
916 3.2176e-04 2.1944e-04 1.2832e-04 3.2307e-04 2.1555e-06 7.7778e-04 1.0986e-03 0:01:53 1084
917 2.9538e-04 2.0925e-04 1.2196e-04 3.1337e-04 2.0474e-06 7.1093e-04 9.9100e-04 0:01:30 1083
918 2.7298e-04 2.0320e-04 1.1363e-04 3.0333e-04 1.9732e-06 6.6251e-04 9.2315e-04 0:01:12 1082

919 2.6337e-04 1.9871e-04 1.0542e-04 2.9449e-04 1.9477e-06 6.3178e-04 8.8203e-04 0:00:58 1081
920 2.6906e-04 1.9507e-04 9.9280e-05 2.8805e-04 1.9497e-06 6.1777e-04 8.4965e-04 0:00:46 1080
921 2.7449e-04 1.8973e-04 9.6714e-05 2.8127e-04 1.9352e-06 6.2984e-04 8.5849e-04 0:00:37 1079
922 2.7255e-04 1.8339e-04 9.4351e-05 2.7502e-04 1.9066e-06 6.5126e-04 8.9982e-04 0:00:29 1078
923 2.6590e-04 1.7871e-04 9.2216e-05 2.6706e-04 1.8970e-06 6.7206e-04 9.4117e-04 0:00:24 1077
924 2.6479e-04 1.7819e-04 9.1104e-05 2.5882e-04 1.8858e-06 6.7860e-04 9.6262e-04 0:00:19 1076

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
925 2.6523e-04 1.7878e-04 9.0824e-05 2.5007e-04 1.8822e-06 6.6780e-04 9.4049e-04 0:00:15 1075
926 2.6846e-04 1.7854e-04 9.0802e-05 2.4358e-04 1.8955e-06 6.2578e-04 8.6101e-04 0:00:12 1074
927 2.6713e-04 1.7512e-04 9.1027e-05 2.3824e-04 1.8506e-06 5.6175e-04 7.5651e-04 0:00:10 1073
928 2.5865e-04 1.6835e-04 9.0069e-05 2.3190e-04 1.7303e-06 5.1832e-04 6.8542e-04 0:00:08 1072
929 2.4056e-04 1.5789e-04 8.6857e-05 2.2574e-04 1.5875e-06 5.0780e-04 6.7899e-04 0:00:06 1071
930 2.2042e-04 1.4570e-04 8.1973e-05 2.1968e-04 1.4665e-06 5.1710e-04 7.1161e-04 0:00:05 1070
931 2.0835e-04 1.3633e-04 7.7665e-05 2.1535e-04 1.4073e-06 5.2402e-04 7.4454e-04 0:00:04 1069
932 2.0556e-04 1.2916e-04 7.5660e-05 2.1291e-04 1.3799e-06 5.0953e-04 7.4367e-04 0:00:03 1068
933 2.0343e-04 1.2506e-04 7.4753e-05 2.1050e-04 1.3834e-06 4.8417e-04 7.2027e-04 0:00:03 1067
934 1.9969e-04 1.2398e-04 7.3529e-05 2.0751e-04 1.3941e-06 4.6276e-04 7.0032e-04 0:00:02 1066
935 1.8942e-04 1.2584e-04 7.1331e-05 2.0462e-04 1.4078e-06 4.4161e-04 6.6754e-04 0:00:02 1065

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
936 1.8060e-04 1.3036e-04 6.8772e-05 1.9849e-04 1.4099e-06 4.2434e-04 6.3172e-04 0:03:34 1064
937 1.7632e-04 1.3421e-04 6.6857e-05 1.9036e-04 1.4225e-06 4.1142e-04 5.9572e-04 0:02:51 1063
938 1.7952e-04 1.3682e-04 6.5074e-05 1.8336e-04 1.4333e-06 4.0053e-04 5.6157e-04 0:02:17 1062
939 1.8173e-04 1.3639e-04 6.4178e-05 1.7728e-04 1.4204e-06 4.0187e-04 5.4903e-04 0:01:49 1061
940 1.7915e-04 1.3370e-04 6.4192e-05 1.7023e-04 1.3472e-06 4.2259e-04 5.8671e-04 0:01:27 1060
941 1.7518e-04 1.2883e-04 6.4988e-05 1.6396e-04 1.2762e-06 4.5287e-04 6.4656e-04 0:01:10 1059
942 1.6921e-04 1.2233e-04 6.5964e-05 1.5800e-04 1.2299e-06 4.7408e-04 6.9777e-04 0:00:56 1058

943 1.6508e-04 1.1594e-04 6.6891e-05 1.5428e-04 1.1966e-06 4.7770e-04 7.1854e-04 0:00:45 1057
944 1.6433e-04 1.1076e-04 6.7576e-05 1.5202e-04 1.1619e-06 4.6322e-04 7.0631e-04 0:00:36 1056
945 1.7055e-04 1.0491e-04 6.7185e-05 1.4984e-04 1.1482e-06 4.3840e-04 6.7878e-04 0:00:28 1055
946 1.5700e-04 1.0165e-04 6.5950e-05 1.4840e-04 1.1055e-06 4.1166e-04 6.4335e-04 0:00:23 1054

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
947 1.5808e-04 9.7982e-05 6.3035e-05 1.4468e-04 1.0633e-06 3.7764e-04 5.8630e-04 0:00:18 1053
948 1.4128e-04 9.7341e-05 5.8945e-05 1.4204e-04 1.0135e-06 3.4693e-04 5.2679e-04 0:00:15 1052
949 1.3632e-04 9.5605e-05 5.4653e-05 1.3727e-04 9.7627e-07 3.1939e-04 4.6478e-04 0:00:12 1051
950 1.3733e-04 9.3002e-05 5.0928e-05 1.3176e-04 9.4609e-07 2.9569e-04 4.1377e-04 0:00:09 1050
951 1.4474e-04 8.8894e-05 4.7992e-05 1.2609e-04 9.2556e-07 2.8026e-04 3.7860e-04 0:00:07 1049
952 1.3413e-04 8.7050e-05 4.6960e-05 1.1993e-04 8.8805e-07 2.7383e-04 3.6971e-04 0:00:06 1048
953 1.3349e-04 8.2899e-05 4.6427e-05 1.1463e-04 8.7116e-07 2.7493e-04 3.8771e-04 0:00:05 1047
954 1.2679e-04 8.0940e-05 4.6634e-05 1.0991e-04 8.6992e-07 2.7688e-04 4.0640e-04 0:00:04 1046
955 1.2237e-04 8.0407e-05 4.7040e-05 1.0643e-04 8.6559e-07 2.7309e-04 4.0915e-04 0:03:32 1045
956 1.2247e-04 7.9937e-05 4.6874e-05 1.0428e-04 8.5510e-07 2.6442e-04 3.9998e-04 0:02:49 1044
957 1.2495e-04 7.8621e-05 4.6084e-05 1.0331e-04 8.2542e-07 2.5640e-04 3.8576e-04 0:02:15 1043

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
958 1.2496e-04 7.5396e-05 4.5383e-05 1.0261e-04 7.7319e-07 2.5594e-04 3.7435e-04 0:01:48 1042
959 1.2039e-04 7.1224e-05 4.4216e-05 1.0196e-04 7.1312e-07 2.5594e-04 3.5964e-04 0:01:27 1041
960 1.1249e-04 6.6880e-05 4.2809e-05 9.9907e-05 6.4022e-07 2.5236e-04 3.4053e-04 0:01:09 1040
961 1.0686e-04 6.2895e-05 4.1036e-05 9.7793e-05 5.8439e-07 2.4750e-04 3.3268e-04 0:00:55 1039
962 1.0508e-04 5.8946e-05 3.9120e-05 9.6262e-05 5.5395e-07 2.4061e-04 3.2836e-04 0:00:44 1038
963 1.0354e-04 5.5752e-05 3.7744e-05 9.4062e-05 5.4600e-07 2.3071e-04 3.1618e-04 0:00:35 1037
964 9.9937e-05 5.4012e-05 3.6258e-05 9.1534e-05 5.4519e-07 2.1930e-04 3.0456e-04 0:00:28 1036
965 9.5998e-05 5.3965e-05 3.4813e-05 8.8795e-05 5.5057e-07 2.1041e-04 2.9516e-04 0:00:23 1035
966 8.8945e-05 5.5627e-05 3.3331e-05 8.6135e-05 5.5885e-07 2.0700e-04 2.9196e-04 0:00:18 1034

967 8.9276e-05 5.7025e-05 3.1965e-05 8.3921e-05 5.6953e-07 2.0796e-04 2.8889e-04 0:00:14 1033
968 9.2319e-05 5.8873e-05 3.1309e-05 8.1807e-05 5.8144e-07 2.1451e-04 2.9276e-04 0:00:12 1032

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
969 9.5807e-05 5.9704e-05 3.1170e-05 8.0278e-05 5.7779e-07 2.2468e-04 3.0367e-04 0:00:09 1031
970 1.0343e-04 5.8705e-05 3.1498e-05 7.8066e-05 5.5457e-07 2.4121e-04 3.3372e-04 0:00:07 1030
971 1.0006e-04 5.8334e-05 3.1978e-05 7.5750e-05 5.3900e-07 2.5951e-04 3.6784e-04 0:00:06 1029
972 1.0688e-04 5.6121e-05 3.3107e-05 7.3915e-05 5.2139e-07 2.7445e-04 3.9645e-04 0:00:05 1028
973 1.0258e-04 5.4455e-05 3.4023e-05 7.2376e-05 5.1228e-07 2.8122e-04 4.1042e-04 0:00:04 1027
974 1.0940e-04 5.1841e-05 3.4438e-05 7.0928e-05 4.9928e-07 2.7677e-04 4.0422e-04 0:00:03 1026
975 1.0386e-04 4.9765e-05 3.4429e-05 6.9283e-05 4.9661e-07 2.6734e-04 3.8869e-04 0:00:02 1025
976 1.0696e-04 4.7199e-05 3.4105e-05 6.7201e-05 4.8461e-07 2.5277e-04 3.6408e-04 0:00:02 1024
977 1.0267e-04 4.4871e-05 3.2995e-05 6.4602e-05 4.6901e-07 2.3581e-04 3.3458e-04 0:00:02 1023
978 9.4274e-05 4.2903e-05 3.1134e-05 6.2069e-05 4.3981e-07 2.2099e-04 3.0148e-04 0:03:26 1022
979 9.5929e-05 4.0283e-05 2.9047e-05 5.9472e-05 4.1384e-07 2.0439e-04 2.6874e-04 0:02:44 1021

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
980 9.0451e-05 3.8439e-05 2.6664e-05 5.7269e-05 3.9847e-07 1.9276e-04 2.4499e-04 0:02:11 1020
981 9.3054e-05 3.6560e-05 2.4937e-05 5.5653e-05 3.8889e-07 1.8353e-04 2.2850e-04 0:01:45 1019
982 8.7883e-05 3.5401e-05 2.3639e-05 5.4383e-05 3.8545e-07 1.7818e-04 2.2041e-04 0:01:24 1018
983 8.8490e-05 3.4082e-05 2.2718e-05 5.3048e-05 3.7891e-07 1.7411e-04 2.1777e-04 0:01:07 1017
984 8.2110e-05 3.4208e-05 2.2236e-05 5.1766e-05 3.8141e-07 1.6944e-04 2.1396e-04 0:00:54 1016
985 8.3532e-05 3.3521e-05 2.1815e-05 5.0330e-05 3.8101e-07 1.6155e-04 2.0420e-04 0:00:43 1015
986 7.7982e-05 3.3802e-05 2.1517e-05 4.9001e-05 3.8294e-07 1.5167e-04 1.8766e-04 0:00:34 1014
987 7.9013e-05 3.2893e-05 2.1331e-05 4.8377e-05 3.7219e-07 1.4071e-04 1.7188e-04 0:00:27 1013
988 7.5516e-05 3.1992e-05 2.1048e-05 4.7487e-05 3.5439e-07 1.3193e-04 1.6237e-04 0:00:22 1012
989 7.1604e-05 3.0583e-05 2.0751e-05 4.6843e-05 3.3251e-07 1.3103e-04 1.7161e-04 0:00:17 1011
990 6.8721e-05 2.8761e-05 2.0419e-05 4.6336e-05 3.1511e-07 1.3537e-04 1.8688e-04 0:00:14 1010

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
991 6.6115e-05 2.6905e-05 2.0566e-05 4.6055e-05 3.0047e-07 1.3936e-04 1.9986e-04 0:00:11 1009
992 6.4460e-05 2.5736e-05 2.0731e-05 4.5824e-05 2.9084e-07 1.4125e-04 2.0817e-04 0:00:09 1008
993 6.2951e-05 2.5321e-05 2.0642e-05 4.5223e-05 2.8650e-07 1.4200e-04 2.1308e-04 0:00:07 1007
994 6.1089e-05 2.5555e-05 2.0496e-05 4.4222e-05 2.8821e-07 1.4265e-04 2.1661e-04 0:00:06 1006
995 5.9089e-05 2.6274e-05 2.0225e-05 4.3036e-05 2.9220e-07 1.4232e-04 2.1761e-04 0:00:05 1005
996 5.7402e-05 2.7165e-05 1.9874e-05 4.1603e-05 2.9838e-07 1.4120e-04 2.1531e-04 0:00:04 1004
997 5.6641e-05 2.8300e-05 1.9604e-05 3.9971e-05 3.0559e-07 1.4068e-04 2.1349e-04 0:00:03 1003
998 5.6143e-05 2.9378e-05 1.9481e-05 3.8386e-05 3.1100e-07 1.4172e-04 2.1468e-04 0:03:23 1002
999 5.6373e-05 2.9972e-05 1.9578e-05 3.6956e-05 3.1400e-07 1.4275e-04 2.1605e-04 0:02:42 1001
1000 5.6957e-05 2.9992e-05 1.9876e-05 3.5542e-05 3.1126e-07 1.4396e-04 2.1928e-04 0:02:09 1000
1001 5.7127e-05 2.9536e-05 2.0210e-05 3.4274e-05 3.0580e-07 1.4530e-04 2.2327e-04 0:01:43 999

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1002 5.7000e-05 2.8718e-05 2.0409e-05 3.3046e-05 2.9944e-07 1.4604e-04 2.2633e-04 0:01:23 998
1003 5.6658e-05 2.7590e-05 2.0375e-05 3.1950e-05 2.9308e-07 1.4564e-04 2.2719e-04 0:01:06 997
1004 5.5864e-05 2.6331e-05 2.0136e-05 3.0977e-05 2.8714e-07 1.4393e-04 2.2497e-04 0:00:53 996
1005 5.4758e-05 2.5211e-05 1.9740e-05 3.0116e-05 2.8225e-07 1.4016e-04 2.1920e-04 0:00:42 995
1006 5.3603e-05 2.4207e-05 1.9180e-05 2.9336e-05 2.7694e-07 1.3474e-04 2.0981e-04 0:00:34 994
1007 5.2512e-05 2.3182e-05 1.8491e-05 2.8679e-05 2.7061e-07 1.2789e-04 1.9757e-04 0:00:27 993
1008 5.1479e-05 2.2062e-05 1.7671e-05 2.8050e-05 2.6257e-07 1.2043e-04 1.8359e-04 0:00:22 992
1009 5.0266e-05 2.0929e-05 1.6842e-05 2.7345e-05 2.5330e-07 1.1320e-04 1.6973e-04 0:00:17 991
1010 4.9303e-05 2.0007e-05 1.6118e-05 2.6759e-05 2.4406e-07 1.0625e-04 1.5675e-04 0:00:14 990
1011 4.8467e-05 1.9295e-05 1.5535e-05 2.6301e-05 2.3564e-07 1.0014e-04 1.4567e-04 0:00:11 989
1012 4.7393e-05 1.8677e-05 1.5016e-05 2.5789e-05 2.2879e-07 9.4471e-05 1.3674e-04 0:00:09 988

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1013 4.6068e-05 1.8153e-05 1.4574e-05 2.5504e-05 2.2314e-07 8.9349e-05 1.2958e-04 0:00:07 987

1014 4.4732e-05 1.7720e-05 1.4219e-05 2.5321e-05 2.1658e-07 8.4804e-05 1.2342e-04 0:03:23 986
1015 4.3643e-05 1.7436e-05 1.3937e-05 2.5163e-05 2.0970e-07 8.1499e-05 1.1857e-04 0:02:42 985
1016 4.3019e-05 1.7204e-05 1.3653e-05 2.5108e-05 2.0401e-07 7.9615e-05 1.1551e-04 0:02:10 984
1017 4.2384e-05 1.7036e-05 1.3310e-05 2.5263e-05 1.9889e-07 7.9029e-05 1.1280e-04 0:01:44 983
1018 4.1796e-05 1.6863e-05 1.3039e-05 2.5603e-05 1.9222e-07 7.9002e-05 1.0994e-04 0:01:23 982
1019 4.1358e-05 1.6710e-05 1.2838e-05 2.6097e-05 1.8374e-07 7.9402e-05 1.0784e-04 0:01:06 981
1020 4.0999e-05 1.6478e-05 1.2661e-05 2.6501e-05 1.7454e-07 7.9625e-05 1.0507e-04 0:00:53 980
1021 4.0507e-05 1.6224e-05 1.2471e-05 2.6789e-05 1.6714e-07 8.0708e-05 1.0729e-04 0:00:42 979
1022 4.0226e-05 1.6140e-05 1.2322e-05 2.6933e-05 1.6345e-07 8.3036e-05 1.1248e-04 0:00:34 978
1023 4.0209e-05 1.6092e-05 1.2219e-05 2.6942e-05 1.6145e-07 8.5395e-05 1.1734e-04 0:00:27 977

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1024 4.0410e-05 1.6204e-05 1.2239e-05 2.6801e-05 1.6237e-07 8.7774e-05 1.2195e-04 0:00:22 976
1025 3.9004e-05 1.6709e-05 1.2288e-05 2.6666e-05 1.6374e-07 8.9630e-05 1.2569e-04 0:00:17 975
1026 4.1851e-05 1.6612e-05 1.2209e-05 2.6429e-05 1.6569e-07 9.1260e-05 1.2879e-04 0:00:14 974
1027 3.9943e-05 1.7208e-05 1.2219e-05 2.6032e-05 1.6846e-07 9.3334e-05 1.3204e-04 0:00:11 973
1028 4.2696e-05 1.7232e-05 1.2241e-05 2.5654e-05 1.7045e-07 9.5489e-05 1.3518e-04 0:00:09 972
1029 4.0829e-05 1.7721e-05 1.2283e-05 2.5072e-05 1.7372e-07 9.7978e-05 1.3837e-04 0:00:07 971
1030 4.3686e-05 1.7567e-05 1.2322e-05 2.4668e-05 1.7411e-07 9.9879e-05 1.4132e-04 0:00:06 970
1031 4.1648e-05 1.7748e-05 1.2299e-05 2.4088e-05 1.7551e-07 1.0159e-04 1.4359e-04 0:00:04 969
1032 4.4235e-05 1.7359e-05 1.2312e-05 2.3692e-05 1.7261e-07 1.0227e-04 1.4478e-04 0:00:04 968
1033 4.1828e-05 1.7253e-05 1.2213e-05 2.2900e-05 1.7152e-07 1.0246e-04 1.4478e-04 0:00:03 967
1034 4.3585e-05 1.6629e-05 1.2090e-05 2.2436e-05 1.6791e-07 1.0135e-04 1.4287e-04 0:00:02 966

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1035 4.0923e-05 1.6223e-05 1.1817e-05 2.1687e-05 1.6675e-07 9.9759e-05 1.3921e-04 0:00:02 965
1036 4.2419e-05 1.5407e-05 1.1541e-05 2.1217e-05 1.6210e-07 9.6800e-05 1.3360e-04 0:00:01 964
1037 3.9661e-05 1.4775e-05 1.1142e-05 2.0456e-05 1.5993e-07 9.3542e-05 1.2711e-04 0:03:14 963

1038 4.0670e-05 1.3917e-05 1.0756e-05 2.0086e-05 1.5520e-07 8.9241e-05 1.1930e-04 0:02:35 962
1039 3.9471e-05 1.3069e-05 1.0245e-05 1.9702e-05 1.5071e-07 8.4521e-05 1.1090e-04 0:02:04 961
1040 3.8298e-05 1.2345e-05 9.7672e-06 1.9341e-05 1.4657e-07 7.9597e-05 1.0235e-04 0:01:39 960
1041 3.7282e-05 1.1756e-05 9.3261e-06 1.9101e-05 1.4208e-07 7.4592e-05 9.3780e-05 0:01:19 959
1042 3.6310e-05 1.1264e-05 8.9593e-06 1.9003e-05 1.3810e-07 6.9779e-05 8.5843e-05 0:01:03 958
1043 3.5227e-05 1.0898e-05 8.6374e-06 1.8910e-05 1.3439e-07 6.5213e-05 7.8639e-05 0:00:50 957
1044 3.4048e-05 1.0614e-05 8.3608e-06 1.8806e-05 1.3115e-07 6.1083e-05 7.2083e-05 0:00:40 956
1045 3.2895e-05 1.0415e-05 8.1279e-06 1.8705e-05 1.2827e-07 5.7634e-05 6.7625e-05 0:00:32 955

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1046 3.1724e-05 1.0329e-05 7.9377e-06 1.8558e-05 1.2608e-07 5.4902e-05 6.5784e-05 0:00:26 954
1047 3.0660e-05 1.0298e-05 7.8182e-06 1.8416e-05 1.2469e-07 5.3283e-05 6.5768e-05 0:00:21 953
1048 2.9714e-05 1.0273e-05 7.7600e-06 1.8273e-05 1.2378e-07 5.2686e-05 6.7807e-05 0:00:16 952
1049 2.8843e-05 1.0303e-05 7.7889e-06 1.8129e-05 1.2330e-07 5.3555e-05 7.1512e-05 0:00:13 951
1050 2.8206e-05 1.0331e-05 7.8920e-06 1.8019e-05 1.2284e-07 5.4845e-05 7.5684e-05 0:00:11 950
1051 2.7752e-05 1.0426e-05 8.0708e-06 1.7926e-05 1.2244e-07 5.6416e-05 7.9951e-05 0:00:08 949
1052 2.7337e-05 1.0556e-05 8.2562e-06 1.7801e-05 1.2207e-07 5.8078e-05 8.3855e-05 0:00:07 948
1053 2.6944e-05 1.0702e-05 8.4207e-06 1.7613e-05 1.2202e-07 5.9558e-05 8.7252e-05 0:00:05 947
1054 2.6614e-05 1.0904e-05 8.5351e-06 1.7339e-05 1.2223e-07 6.0760e-05 8.9835e-05 0:00:04 946
1055 2.6309e-05 1.1112e-05 8.6171e-06 1.7002e-05 1.2251e-07 6.1635e-05 9.1756e-05 0:00:03 945
1056 2.6117e-05 1.1321e-05 8.6535e-06 1.6580e-05 1.2269e-07 6.2228e-05 9.3062e-05 0:00:03 944

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1057 2.5957e-05 1.1477e-05 8.6605e-06 1.6129e-05 1.2278e-07 6.2598e-05 9.4051e-05 0:00:02 943
1058 2.5842e-05 1.1575e-05 8.6509e-06 1.5619e-05 1.2289e-07 6.2797e-05 9.4920e-05 0:00:02 942
1059 2.5798e-05 1.1574e-05 8.6165e-06 1.5093e-05 1.2242e-07 6.2811e-05 9.5374e-05 0:03:10 941
1060 2.5585e-05 1.1490e-05 8.5516e-06 1.4517e-05 1.2205e-07 6.2458e-05 9.5149e-05 0:02:32 940
1061 2.5516e-05 1.1304e-05 8.4635e-06 1.3930e-05 1.2135e-07 6.1912e-05 9.4549e-05 0:02:01 939

1062 2.5395e-05 1.1045e-05 8.3520e-06 1.3330e-05 1.2009e-07 6.1252e-05 9.3653e-05 0:01:37 938
1063 2.5019e-05 1.0728e-05 8.1989e-06 1.2773e-05 1.1868e-07 6.0364e-05 9.2308e-05 0:01:17 937
1064 2.4605e-05 1.0399e-05 8.0256e-06 1.2285e-05 1.1693e-07 5.9214e-05 9.0523e-05 0:01:02 936
1065 2.4150e-05 1.0035e-05 7.8380e-06 1.1911e-05 1.1534e-07 5.7722e-05 8.8014e-05 0:00:49 935
1066 2.3757e-05 9.6211e-06 7.6354e-06 1.1595e-05 1.1316e-07 5.5895e-05 8.4934e-05 0:00:39 934
1067 2.3356e-05 9.2025e-06 7.4238e-06 1.1341e-05 1.1066e-07 5.3807e-05 8.1251e-05 0:00:32 933

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1068 2.2921e-05 8.8074e-06 7.2132e-06 1.1173e-05 1.0784e-07 5.1429e-05 7.7136e-05 0:00:25 932
1069 2.2425e-05 8.4276e-06 7.0012e-06 1.1077e-05 1.0488e-07 4.8931e-05 7.2789e-05 0:00:20 931
1070 2.1937e-05 8.0875e-06 6.8050e-06 1.1059e-05 1.0191e-07 4.6333e-05 6.8335e-05 0:00:16 930
1071 2.1433e-05 7.7530e-06 6.6162e-06 1.1128e-05 9.8515e-08 4.3686e-05 6.3958e-05 0:00:13 929
1072 2.0953e-05 7.4711e-06 6.4310e-06 1.1239e-05 9.5092e-08 4.1091e-05 5.9740e-05 0:00:10 928
1073 2.0457e-05 7.2480e-06 6.2548e-06 1.1389e-05 9.1841e-08 3.8687e-05 5.5783e-05 0:00:08 927
1074 1.9960e-05 7.1175e-06 6.0821e-06 1.1521e-05 8.8545e-08 3.6690e-05 5.2371e-05 0:00:07 926
1075 1.9488e-05 7.0340e-06 5.9242e-06 1.1625e-05 8.5433e-08 3.5401e-05 4.9815e-05 0:00:05 925
1076 1.9102e-05 6.9862e-06 5.7824e-06 1.1731e-05 8.2684e-08 3.4667e-05 4.7892e-05 0:00:04 924
1077 1.8745e-05 7.0161e-06 5.6724e-06 1.1838e-05 8.0182e-08 3.4281e-05 4.6435e-05 0:00:03 923
1078 1.8485e-05 7.0751e-06 5.5814e-06 1.1928e-05 7.8066e-08 3.4309e-05 4.5258e-05 0:00:03 922

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1079 1.8374e-05 7.1804e-06 5.5163e-06 1.1997e-05 7.6266e-08 3.4780e-05 4.5774e-05 0:00:02 921
1080 1.8310e-05 7.2724e-06 5.4626e-06 1.2022e-05 7.5486e-08 3.5910e-05 4.7983e-05 0:00:02 920
1081 1.8316e-05 7.3878e-06 5.4472e-06 1.2029e-05 7.5726e-08 3.7567e-05 5.1079e-05 0:00:01 919
1082 1.7660e-05 7.6510e-06 5.5124e-06 1.2061e-05 7.6538e-08 3.9071e-05 5.4065e-05 0:00:01 918
1083 1.8920e-05 7.6664e-06 5.5786e-06 1.2086e-05 7.7189e-08 4.0831e-05 5.7229e-05 0:00:01 917
1084 1.8256e-05 7.9440e-06 5.7040e-06 1.2042e-05 7.8280e-08 4.2379e-05 6.0010e-05 0:03:04 916
1085 1.9646e-05 7.9440e-06 5.7831e-06 1.2021e-05 7.8874e-08 4.3898e-05 6.2653e-05 0:02:27 915

1086 1.8827e-05 8.1625e-06 5.8521e-06 1.1889e-05 7.9701e-08 4.5197e-05 6.4596e-05 0:01:57 914
1087 2.0152e-05 8.1091e-06 5.8980e-06 1.1774e-05 7.9836e-08 4.6219e-05 6.6168e-05 0:01:34 913
1088 1.9207e-05 8.2521e-06 5.9029e-06 1.1521e-05 8.0335e-08 4.6944e-05 6.7049e-05 0:01:15 912
1089 2.0459e-05 8.1150e-06 5.8950e-06 1.1298e-05 8.0022e-08 4.7279e-05 6.7595e-05 0:01:00 911

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1090 1.9393e-05 8.1513e-06 5.8426e-06 1.0958e-05 8.0076e-08 4.7470e-05 6.7460e-05 0:00:48 910
1091 2.0511e-05 7.9217e-06 5.7797e-06 1.0712e-05 7.8905e-08 4.7156e-05 6.6797e-05 0:00:38 909
1092 1.9364e-05 7.8474e-06 5.6715e-06 1.0319e-05 7.8736e-08 4.6887e-05 6.5736e-05 0:00:31 908
1093 2.0322e-05 7.5417e-06 5.5706e-06 1.0092e-05 7.7447e-08 4.6044e-05 6.4232e-05 0:00:24 907
1094 1.9150e-05 7.3609e-06 5.4141e-06 9.7209e-06 7.7154e-08 4.5242e-05 6.2322e-05 0:00:20 906
1095 1.9865e-05 7.0097e-06 5.2737e-06 9.5433e-06 7.5512e-08 4.3862e-05 5.9896e-05 0:00:16 905
1096 1.8683e-05 6.7397e-06 5.0767e-06 9.2278e-06 7.4919e-08 4.2524e-05 5.7116e-05 0:00:12 904
1097 1.9166e-05 6.3684e-06 4.9166e-06 9.1289e-06 7.2509e-08 4.0676e-05 5.4014e-05 0:00:10 903
1098 1.8627e-05 6.0122e-06 4.7138e-06 9.0018e-06 7.0763e-08 3.8681e-05 5.0570e-05 0:00:08 902
1099 1.8039e-05 5.7198e-06 4.5349e-06 8.8906e-06 6.9158e-08 3.6483e-05 4.6806e-05 0:00:06 901
1100 1.7524e-05 5.4805e-06 4.3785e-06 8.8290e-06 6.7462e-08 3.4171e-05 4.2852e-05 0:00:05 900

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1101 1.7008e-05 5.2907e-06 4.2544e-06 8.8129e-06 6.5598e-08 3.1842e-05 3.9027e-05 0:00:04 899
1102 1.6451e-05 5.1270e-06 4.1353e-06 8.8154e-06 6.3810e-08 2.9568e-05 3.5478e-05 0:00:03 898
1103 1.5884e-05 4.9919e-06 4.0201e-06 8.8267e-06 6.2016e-08 2.7576e-05 3.2283e-05 0:03:02 897
1104 1.5322e-05 4.8971e-06 3.9169e-06 8.8234e-06 6.0275e-08 2.5986e-05 3.0544e-05 0:02:25 896
1105 1.4819e-05 4.8448e-06 3.8366e-06 8.8036e-06 5.8895e-08 2.4977e-05 3.0366e-05 0:01:56 895
1106 1.4399e-05 4.8263e-06 3.7871e-06 8.7684e-06 5.8239e-08 2.4571e-05 3.1224e-05 0:01:33 894
1107 1.3984e-05 4.8442e-06 3.7758e-06 8.7127e-06 5.7843e-08 2.4833e-05 3.2826e-05 0:01:14 893
1108 1.3661e-05 4.8842e-06 3.7945e-06 8.6519e-06 5.7737e-08 2.5391e-05 3.4738e-05 0:00:59 892
1109 1.3434e-05 4.9582e-06 3.8576e-06 8.5769e-06 5.7897e-08 2.6174e-05 3.6765e-05 0:00:47 891

1110 1.3257e-05 5.0593e-06 3.9370e-06 8.5030e-06 5.8237e-08 2.7040e-05 3.8714e-05 0:00:38 890
1111 1.3115e-05 5.1718e-06 4.0125e-06 8.4095e-06 5.8681e-08 2.7911e-05 4.0496e-05 0:00:30 889

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1112 1.3008e-05 5.2905e-06 4.0801e-06 8.2984e-06 5.9063e-08 2.8717e-05 4.2064e-05 0:00:24 888
1113 1.2944e-05 5.4145e-06 4.1428e-06 8.1765e-06 5.9319e-08 2.9424e-05 4.3362e-05 0:00:19 887
1114 1.2895e-05 5.5194e-06 4.1890e-06 8.0294e-06 5.9366e-08 2.9979e-05 4.4468e-05 0:00:15 886
1115 1.2842e-05 5.6046e-06 4.2238e-06 7.8701e-06 5.9218e-08 3.0446e-05 4.5454e-05 0:00:12 885
1116 1.2819e-05 5.6486e-06 4.2336e-06 7.6758e-06 5.9063e-08 3.0720e-05 4.6169e-05 0:00:10 884
1117 1.2791e-05 5.6509e-06 4.2270e-06 7.4501e-06 5.8885e-08 3.0870e-05 4.6589e-05 0:00:08 883
1118 1.2750e-05 5.6150e-06 4.2039e-06 7.1951e-06 5.8546e-08 3.0841e-05 4.6731e-05 0:00:06 882
1119 1.2690e-05 5.5424e-06 4.1619e-06 6.9268e-06 5.8110e-08 3.0666e-05 4.6626e-05 0:00:05 881
1120 1.2582e-05 5.4377e-06 4.1055e-06 6.6615e-06 5.7715e-08 3.0439e-05 4.6299e-05 0:00:04 880
1121 1.2441e-05 5.3084e-06 4.0315e-06 6.4091e-06 5.7131e-08 3.0094e-05 4.5696e-05 0:00:03 879
1122 1.2271e-05 5.1590e-06 3.9390e-06 6.1591e-06 5.6393e-08 2.9573e-05 4.4841e-05 0:00:03 878

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1123 1.2092e-05 4.9968e-06 3.8346e-06 5.9400e-06 5.5545e-08 2.8901e-05 4.3677e-05 0:02:57 877
1124 1.1889e-05 4.8176e-06 3.7241e-06 5.7629e-06 5.4674e-08 2.8101e-05 4.2236e-05 0:02:22 876
1125 1.1686e-05 4.6226e-06 3.6175e-06 5.6121e-06 5.3669e-08 2.7169e-05 4.0617e-05 0:01:53 875
1126 1.1469e-05 4.4209e-06 3.5132e-06 5.5121e-06 5.2557e-08 2.6141e-05 3.8795e-05 0:01:31 874
1127 1.1242e-05 4.2284e-06 3.4108e-06 5.4597e-06 5.1269e-08 2.4967e-05 3.6748e-05 0:01:12 873
1128 1.0985e-05 4.0388e-06 3.3154e-06 5.4458e-06 4.9864e-08 2.3676e-05 3.4557e-05 0:00:58 872
1129 1.0713e-05 3.8600e-06 3.2246e-06 5.4750e-06 4.8355e-08 2.2318e-05 3.2339e-05 0:00:46 871
1130 1.0441e-05 3.6994e-06 3.1382e-06 5.5348e-06 4.6901e-08 2.0941e-05 3.0100e-05 0:00:37 870
1131 1.0203e-05 3.5737e-06 3.0587e-06 5.6015e-06 4.5411e-08 1.9588e-05 2.7854e-05 0:00:29 869
1132 9.9553e-06 3.5017e-06 2.9819e-06 5.6698e-06 4.3836e-08 1.8323e-05 2.5698e-05 0:00:24 868
1133 9.7397e-06 3.4589e-06 2.9115e-06 5.7324e-06 4.2316e-08 1.7384e-05 2.4007e-05 0:00:19 867

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1134 9.5235e-06 3.4336e-06 2.8528e-06 5.7852e-06 4.0910e-08 1.6858e-05 2.2946e-05 0:00:15 866
1135 9.3375e-06 3.4306e-06 2.8025e-06 5.8352e-06 3.9523e-08 1.6645e-05 2.2199e-05 0:00:12 865
1136 9.1929e-06 3.4478e-06 2.7614e-06 5.8708e-06 3.8415e-08 1.6664e-05 2.1820e-05 0:00:10 864
1137 9.0890e-06 3.5054e-06 2.7289e-06 5.8976e-06 3.7720e-08 1.7038e-05 2.2514e-05 0:00:08 863
1138 9.0453e-06 3.5720e-06 2.7067e-06 5.9178e-06 3.7604e-08 1.7723e-05 2.3875e-05 0:00:06 862
1139 9.0500e-06 3.6438e-06 2.7028e-06 5.9383e-06 3.7847e-08 1.8651e-05 2.5507e-05 0:00:05 861
1140 8.7149e-06 3.7930e-06 2.7427e-06 5.9767e-06 3.8222e-08 1.9421e-05 2.6970e-05 0:00:04 860
1141 9.3147e-06 3.8132e-06 2.7754e-06 5.9950e-06 3.8505e-08 2.0279e-05 2.8515e-05 0:00:03 859
1142 8.9764e-06 3.9627e-06 2.8426e-06 5.9804e-06 3.8995e-08 2.1053e-05 2.9902e-05 0:02:54 858
1143 9.6419e-06 3.9755e-06 2.8899e-06 5.9827e-06 3.9296e-08 2.1848e-05 3.1261e-05 0:02:19 857
1144 9.2468e-06 4.0948e-06 2.9384e-06 5.9329e-06 3.9695e-08 2.2512e-05 3.2352e-05 0:01:51 856

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1145 9.8981e-06 4.0731e-06 2.9697e-06 5.8981e-06 3.9764e-08 2.3084e-05 3.3267e-05 0:01:29 855
1146 9.4265e-06 4.1516e-06 2.9810e-06 5.7919e-06 4.0077e-08 2.3530e-05 3.3834e-05 0:01:11 854
1147 1.0050e-05 4.0888e-06 2.9852e-06 5.7028e-06 3.9928e-08 2.3775e-05 3.4148e-05 0:00:57 853
1148 9.5523e-06 4.1278e-06 2.9684e-06 5.5402e-06 4.0105e-08 2.3932e-05 3.4162e-05 0:00:45 852
1149 1.0117e-05 4.0204e-06 2.9480e-06 5.4233e-06 3.9700e-08 2.3845e-05 3.3937e-05 0:00:36 851
1150 9.5802e-06 4.0079e-06 2.8996e-06 5.2328e-06 3.9691e-08 2.3741e-05 3.3459e-05 0:00:29 850
1151 1.0077e-05 3.8697e-06 2.8549e-06 5.1144e-06 3.9094e-08 2.3363e-05 3.2766e-05 0:00:23 849
1152 9.5365e-06 3.7995e-06 2.7806e-06 4.9214e-06 3.8934e-08 2.2976e-05 3.1872e-05 0:00:18 848
1153 9.8969e-06 3.6292e-06 2.7137e-06 4.8216e-06 3.8082e-08 2.2321e-05 3.0694e-05 0:00:15 847
1154 9.3358e-06 3.5033e-06 2.6178e-06 4.6654e-06 3.7831e-08 2.1685e-05 2.9408e-05 0:00:12 846
1155 9.5834e-06 3.3141e-06 2.5375e-06 4.6027e-06 3.6677e-08 2.0787e-05 2.7836e-05 0:00:09 845

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1156 9.3383e-06 3.1299e-06 2.4324e-06 4.5319e-06 3.5818e-08 1.9796e-05 2.6157e-05 0:00:08 844

1157 9.0714e-06 2.9685e-06 2.3449e-06 4.4794e-06 3.5024e-08 1.8719e-05 2.4318e-05 0:00:06 843
1158 8.8373e-06 2.8380e-06 2.2717e-06 4.4558e-06 3.4220e-08 1.7580e-05 2.2412e-05 0:00:05 842
1159 8.6164e-06 2.7361e-06 2.2120e-06 4.4568e-06 3.3400e-08 1.6425e-05 2.0486e-05 0:00:04 841
1160 8.3675e-06 2.6469e-06 2.1553e-06 4.4726e-06 3.2579e-08 1.5305e-05 1.8680e-05 0:00:03 840
1161 8.1128e-06 2.5799e-06 2.0974e-06 4.4853e-06 3.1686e-08 1.4281e-05 1.7064e-05 0:00:02 839
1162 7.8499e-06 2.5249e-06 2.0433e-06 4.4954e-06 3.0848e-08 1.3402e-05 1.5677e-05 0:00:02 838
1163 7.6062e-06 2.4993e-06 1.9991e-06 4.4997e-06 3.0029e-08 1.2784e-05 1.5246e-05 0:02:49 837
1164 7.3850e-06 2.4907e-06 1.9650e-06 4.4923e-06 2.9491e-08 1.2518e-05 1.5681e-05 0:02:15 836
1165 7.1728e-06 2.4883e-06 1.9454e-06 4.4713e-06 2.9265e-08 1.2647e-05 1.6563e-05 0:01:48 835
1166 6.9797e-06 2.5028e-06 1.9445e-06 4.4452e-06 2.9134e-08 1.2947e-05 1.7561e-05 0:01:26 834

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1167 6.8260e-06 2.5362e-06 1.9621e-06 4.4149e-06 2.9206e-08 1.3371e-05 1.8639e-05 0:01:09 833
1168 6.7264e-06 2.5888e-06 1.9965e-06 4.3799e-06 2.9361e-08 1.3851e-05 1.9691e-05 0:00:55 832
1169 6.6570e-06 2.6481e-06 2.0363e-06 4.3415e-06 2.9557e-08 1.4325e-05 2.0647e-05 0:00:44 831
1170 6.6175e-06 2.7123e-06 2.0724e-06 4.2972e-06 2.9755e-08 1.4772e-05 2.1473e-05 0:00:35 830
1171 6.6048e-06 2.7762e-06 2.1084e-06 4.2444e-06 3.0021e-08 1.5171e-05 2.2174e-05 0:00:28 829
1172 6.6031e-06 2.8374e-06 2.1402e-06 4.1792e-06 3.0183e-08 1.5497e-05 2.2780e-05 0:00:22 828
1173 6.6038e-06 2.8909e-06 2.1651e-06 4.1098e-06 3.0230e-08 1.5752e-05 2.3325e-05 0:00:18 827
1174 6.6336e-06 2.9249e-06 2.1808e-06 4.0258e-06 3.0187e-08 1.5951e-05 2.3746e-05 0:00:14 826
1175 6.6478e-06 2.9392e-06 2.1850e-06 3.9253e-06 3.0180e-08 1.6066e-05 2.4008e-05 0:00:11 825
1176 6.6541e-06 2.9330e-06 2.1804e-06 3.8083e-06 3.0103e-08 1.6089e-05 2.4124e-05 0:00:09 824
1177 6.6555e-06 2.9067e-06 2.1632e-06 3.6760e-06 2.9949e-08 1.6050e-05 2.4108e-05 0:00:07 823

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1178 6.6304e-06 2.8606e-06 2.1369e-06 3.5433e-06 2.9828e-08 1.5969e-05 2.3993e-05 0:00:06 822
1179 6.5720e-06 2.8000e-06 2.1024e-06 3.4097e-06 2.9628e-08 1.5830e-05 2.3751e-05 0:00:05 821
1180 6.4966e-06 2.7291e-06 2.0595e-06 3.2810e-06 2.9338e-08 1.5580e-05 2.3346e-05 0:00:04 820

1181 6.4227e-06 2.6474e-06 2.0081e-06 3.1631e-06 2.9045e-08 1.5243e-05 2.2753e-05 0:00:03 819
1182 6.3453e-06 2.5519e-06 1.9517e-06 3.0709e-06 2.8706e-08 1.4843e-05 2.2039e-05 0:00:02 818
1183 6.2637e-06 2.4476e-06 1.8946e-06 2.9956e-06 2.8275e-08 1.4385e-05 2.1206e-05 0:00:02 817
1184 6.1615e-06 2.3398e-06 1.8382e-06 2.9400e-06 2.7738e-08 1.3857e-05 2.0278e-05 0:00:02 816
1185 6.0534e-06 2.2333e-06 1.7826e-06 2.9131e-06 2.7147e-08 1.3262e-05 1.9239e-05 0:02:44 815
1186 5.9322e-06 2.1309e-06 1.7303e-06 2.9092e-06 2.6465e-08 1.2585e-05 1.8099e-05 0:02:11 814
1187 5.7927e-06 2.0332e-06 1.6841e-06 2.9209e-06 2.5769e-08 1.1864e-05 1.6918e-05 0:01:45 813
1188 5.6584e-06 1.9444e-06 1.6398e-06 2.9504e-06 2.5025e-08 1.1118e-05 1.5691e-05 0:01:24 812

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1189 5.5309e-06 1.8767e-06 1.5986e-06 2.9824e-06 2.4266e-08 1.0373e-05 1.4445e-05 0:01:07 811
1190 5.4025e-06 1.8367e-06 1.5595e-06 3.0144e-06 2.3439e-08 9.6813e-06 1.3285e-05 0:00:53 810
1191 5.2739e-06 1.8115e-06 1.5224e-06 3.0440e-06 2.2574e-08 9.1263e-06 1.2342e-05 0:00:43 809
1192 5.1401e-06 1.7970e-06 1.4909e-06 3.0682e-06 2.1792e-08 8.7978e-06 1.1773e-05 0:00:34 808
1193 5.0121e-06 1.7899e-06 1.4627e-06 3.0877e-06 2.1028e-08 8.6806e-06 1.1365e-05 0:00:27 807
1194 4.9047e-06 1.7961e-06 1.4399e-06 3.1015e-06 2.0374e-08 8.6986e-06 1.1309e-05 0:00:22 806
1195 4.8167e-06 1.8195e-06 1.4213e-06 3.1077e-06 1.9967e-08 8.9016e-06 1.1786e-05 0:00:17 805
1196 4.7564e-06 1.8476e-06 1.4092e-06 3.1125e-06 1.9841e-08 9.2550e-06 1.2496e-05 0:00:14 804
1197 4.7259e-06 1.8828e-06 1.4055e-06 3.1128e-06 1.9928e-08 9.7395e-06 1.3361e-05 0:00:11 803
1198 4.5290e-06 1.9560e-06 1.4244e-06 3.1264e-06 2.0129e-08 1.0130e-05 1.4108e-05 0:00:09 802
1199 4.8104e-06 1.9694e-06 1.4429e-06 3.1257e-06 2.0257e-08 1.0561e-05 1.4901e-05 0:00:07 801

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1200 4.6258e-06 2.0518e-06 1.4776e-06 3.1157e-06 2.0602e-08 1.0952e-05 1.5642e-05 0:00:06 800
1201 4.9580e-06 2.0653e-06 1.5049e-06 3.1101e-06 2.0722e-08 1.1362e-05 1.6361e-05 0:00:05 799
1202 4.7673e-06 2.1340e-06 1.5309e-06 3.0835e-06 2.1014e-08 1.1701e-05 1.6947e-05 0:00:04 798
1203 5.1111e-06 2.1269e-06 1.5506e-06 3.0611e-06 2.1090e-08 1.1993e-05 1.7438e-05 0:02:42 797
1204 4.8873e-06 2.1726e-06 1.5625e-06 3.0046e-06 2.1295e-08 1.2245e-05 1.7786e-05 0:02:10 796

1205 5.2162e-06 2.1433e-06 1.5682e-06 2.9608e-06 2.1214e-08 1.2382e-05 1.7948e-05 0:01:44 795
1206 4.9789e-06 2.1630e-06 1.5625e-06 2.8742e-06 2.1323e-08 1.2470e-05 1.7993e-05 0:01:23 794
1207 5.2710e-06 2.1076e-06 1.5534e-06 2.8138e-06 2.1099e-08 1.2419e-05 1.7849e-05 0:01:06 793
1208 4.9926e-06 2.0998e-06 1.5286e-06 2.7133e-06 2.1111e-08 1.2360e-05 1.7620e-05 0:00:53 792
1209 5.2528e-06 2.0256e-06 1.5044e-06 2.6483e-06 2.0805e-08 1.2153e-05 1.7232e-05 0:00:42 791
1210 4.9863e-06 1.9876e-06 1.4650e-06 2.5474e-06 2.0785e-08 1.1957e-05 1.6765e-05 0:00:34 790

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1211 5.1913e-06 1.8991e-06 1.4309e-06 2.4934e-06 2.0313e-08 1.1627e-05 1.6146e-05 0:00:27 789
1212 5.1012e-06 1.8132e-06 1.3795e-06 2.4258e-06 2.0097e-08 1.1260e-05 1.5447e-05 0:00:22 788
1213 4.8184e-06 1.7494e-06 1.3307e-06 2.3518e-06 1.9935e-08 1.0875e-05 1.4653e-05 0:00:17 787
1214 4.9391e-06 1.6507e-06 1.2889e-06 2.3447e-06 1.9258e-08 1.0344e-05 1.3779e-05 0:00:14 786
1215 4.7961e-06 1.5562e-06 1.2376e-06 2.3358e-06 1.8761e-08 9.7818e-06 1.2856e-05 0:00:11 785
1216 4.6388e-06 1.4805e-06 1.1973e-06 2.3254e-06 1.8343e-08 9.1858e-06 1.1872e-05 0:00:09 784
1217 4.5014e-06 1.4258e-06 1.1636e-06 2.3226e-06 1.7897e-08 8.5579e-06 1.0834e-05 0:00:07 783
1218 4.3686e-06 1.3812e-06 1.1327e-06 2.3286e-06 1.7403e-08 7.9545e-06 9.8433e-06 0:00:06 782
1219 4.2408e-06 1.3466e-06 1.1021e-06 2.3354e-06 1.6896e-08 7.3932e-06 8.9384e-06 0:00:04 781
1220 4.1114e-06 1.3230e-06 1.0749e-06 2.3418e-06 1.6395e-08 6.9123e-06 8.1497e-06 0:00:04 780
1221 3.9864e-06 1.3105e-06 1.0523e-06 2.3454e-06 1.5908e-08 6.5631e-06 7.7944e-06 0:00:03 779

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1222 3.8625e-06 1.3062e-06 1.0338e-06 2.3425e-06 1.5537e-08 6.4290e-06 8.0192e-06 0:00:02 778
1223 3.7522e-06 1.3043e-06 1.0218e-06 2.3334e-06 1.5343e-08 6.4977e-06 8.4714e-06 0:00:02 777
1224 3.6509e-06 1.3087e-06 1.0191e-06 2.3194e-06 1.5243e-08 6.6735e-06 9.0018e-06 0:00:01 776
1225 3.5710e-06 1.3260e-06 1.0266e-06 2.3042e-06 1.5239e-08 6.9068e-06 9.5679e-06 0:00:01 775
1226 3.5197e-06 1.3511e-06 1.0429e-06 2.2858e-06 1.5302e-08 7.1631e-06 1.0110e-05 0:02:36 774
1227 3.4933e-06 1.3832e-06 1.0628e-06 2.2657e-06 1.5412e-08 7.4185e-06 1.0616e-05 0:02:04 773
1228 3.4803e-06 1.4176e-06 1.0820e-06 2.2438e-06 1.5527e-08 7.6596e-06 1.1060e-05 0:01:39 772

1229 3.4797e-06 1.4531e-06 1.1006e-06 2.2177e-06 1.5661e-08 7.8818e-06 1.1444e-05 0:01:19 771
1230 3.4880e-06 1.4862e-06 1.1171e-06 2.1858e-06 1.5745e-08 8.0657e-06 1.1808e-05 0:01:03 770
1231 3.5082e-06 1.5133e-06 1.1309e-06 2.1494e-06 1.5772e-08 8.2158e-06 1.2110e-05 0:00:51 769
1232 3.5282e-06 1.5302e-06 1.1393e-06 2.1069e-06 1.5766e-08 8.3396e-06 1.2357e-05 0:00:41 768

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1233 3.5453e-06 1.5371e-06 1.1425e-06 2.0565e-06 1.5759e-08 8.4130e-06 1.2522e-05 0:00:32 767
1234 3.5534e-06 1.5343e-06 1.1406e-06 1.9975e-06 1.5723e-08 8.4450e-06 1.2609e-05 0:00:26 766
1235 3.5522e-06 1.5206e-06 1.1318e-06 1.9338e-06 1.5665e-08 8.4500e-06 1.2617e-05 0:00:21 765
1236 3.5385e-06 1.4972e-06 1.1178e-06 1.8679e-06 1.5595e-08 8.4195e-06 1.2555e-05 0:00:17 764
1237 3.5071e-06 1.4659e-06 1.0994e-06 1.8004e-06 1.5504e-08 8.3405e-06 1.2413e-05 0:00:13 763
1238 3.4639e-06 1.4303e-06 1.0763e-06 1.7360e-06 1.5340e-08 8.2130e-06 1.2174e-05 0:00:11 762
1239 3.4277e-06 1.3880e-06 1.0487e-06 1.6747e-06 1.5181e-08 8.0388e-06 1.1860e-05 0:00:08 761
1240 3.3821e-06 1.3372e-06 1.0180e-06 1.6235e-06 1.4973e-08 7.8271e-06 1.1483e-05 0:00:07 760
1241 3.3377e-06 1.2804e-06 9.8740e-07 1.5839e-06 1.4720e-08 7.5833e-06 1.1029e-05 0:00:05 759
1242 3.2783e-06 1.2211e-06 9.5599e-07 1.5539e-06 1.4423e-08 7.2949e-06 1.0516e-05 0:00:04 758
1243 3.2150e-06 1.1624e-06 9.2532e-07 1.5380e-06 1.4104e-08 6.9670e-06 9.9507e-06 0:02:35 757

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1244 3.1430e-06 1.1057e-06 8.9631e-07 1.5351e-06 1.3750e-08 6.5980e-06 9.3451e-06 0:02:04 756
1245 3.0627e-06 1.0522e-06 8.7103e-07 1.5416e-06 1.3388e-08 6.2105e-06 8.7140e-06 0:01:39 755
1246 2.9853e-06 1.0043e-06 8.4782e-07 1.5551e-06 1.3005e-08 5.8012e-06 8.0455e-06 0:01:19 754
1247 2.9132e-06 9.7036e-07 8.2527e-07 1.5692e-06 1.2606e-08 5.3960e-06 7.3739e-06 0:01:03 753
1248 2.8422e-06 9.5143e-07 8.0564e-07 1.5830e-06 1.2188e-08 5.0236e-06 6.7521e-06 0:00:50 752
1249 2.7711e-06 9.3972e-07 7.8633e-07 1.5969e-06 1.1753e-08 4.7165e-06 6.2476e-06 0:00:40 751
1250 2.6990e-06 9.3443e-07 7.7074e-07 1.6078e-06 1.1355e-08 4.5255e-06 5.9437e-06 0:00:32 750
1251 2.6309e-06 9.3169e-07 7.5632e-07 1.6154e-06 1.0983e-08 4.4716e-06 5.7434e-06 0:00:26 749
1252 2.5748e-06 9.3729e-07 7.4579e-07 1.6206e-06 1.0667e-08 4.5014e-06 5.8372e-06 0:00:21 748

1253 2.5278e-06 9.4835e-07 7.3718e-07 1.6220e-06 1.0502e-08 4.6339e-06 6.1592e-06 0:00:16 747
1254 2.4915e-06 9.6245e-07 7.3238e-07 1.6221e-06 1.0445e-08 4.8335e-06 6.5538e-06 0:00:13 746

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1255 2.4765e-06 9.8111e-07 7.3338e-07 1.6220e-06 1.0473e-08 5.0866e-06 6.9941e-06 0:00:10 745
1256 2.3669e-06 1.0174e-06 7.4541e-07 1.6269e-06 1.0580e-08 5.2896e-06 7.3930e-06 0:00:08 744
1257 2.5139e-06 1.0230e-06 7.5676e-07 1.6246e-06 1.0616e-08 5.5014e-06 7.7785e-06 0:00:07 743
1258 2.4087e-06 1.0652e-06 7.7490e-07 1.6161e-06 1.0759e-08 5.6923e-06 8.1512e-06 0:00:05 742
1259 2.5772e-06 1.0709e-06 7.8796e-07 1.6115e-06 1.0805e-08 5.8884e-06 8.5000e-06 0:00:04 741
1260 2.4713e-06 1.1065e-06 8.0002e-07 1.5938e-06 1.0942e-08 6.0516e-06 8.7860e-06 0:00:03 740
1261 2.6512e-06 1.1017e-06 8.0899e-07 1.5791e-06 1.0982e-08 6.1874e-06 9.0260e-06 0:00:03 739
1262 2.5280e-06 1.1258e-06 8.1382e-07 1.5474e-06 1.1112e-08 6.3180e-06 9.2065e-06 0:00:02 738
1263 2.7024e-06 1.1106e-06 8.1539e-07 1.5222e-06 1.1076e-08 6.3931e-06 9.2893e-06 0:00:02 737
1264 2.5728e-06 1.1219e-06 8.1131e-07 1.4763e-06 1.1148e-08 6.4463e-06 9.3191e-06 0:00:01 736
1265 2.7273e-06 1.0944e-06 8.0618e-07 1.4440e-06 1.1032e-08 6.4255e-06 9.2550e-06 0:02:28 735

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1266 2.5864e-06 1.0899e-06 7.9266e-07 1.3919e-06 1.1037e-08 6.3968e-06 9.1429e-06 0:01:58 734
1267 2.7240e-06 1.0512e-06 7.8020e-07 1.3579e-06 1.0883e-08 6.2901e-06 8.9454e-06 0:01:35 733
1268 2.5775e-06 1.0313e-06 7.5944e-07 1.3046e-06 1.0866e-08 6.1901e-06 8.7121e-06 0:01:16 732
1269 2.6826e-06 9.8460e-07 7.4186e-07 1.2771e-06 1.0617e-08 6.0175e-06 8.3964e-06 0:01:00 731
1270 2.6265e-06 9.3833e-07 7.1479e-07 1.2419e-06 1.0430e-08 5.8200e-06 8.0259e-06 0:00:48 730
1271 2.5598e-06 8.9246e-07 6.8851e-07 1.2127e-06 1.0241e-08 5.5839e-06 7.5933e-06 0:00:39 729
1272 2.5047e-06 8.4687e-07 6.6363e-07 1.1940e-06 1.0010e-08 5.3138e-06 7.1236e-06 0:00:31 728
1273 2.4470e-06 8.0310e-07 6.4160e-07 1.1877e-06 9.7584e-09 5.0172e-06 6.6245e-06 0:00:25 727
1274 2.3832e-06 7.6488e-07 6.2282e-07 1.1893e-06 9.5035e-09 4.7074e-06 6.1047e-06 0:00:20 726
1275 2.3132e-06 7.3466e-07 6.0472e-07 1.1935e-06 9.2591e-09 4.3831e-06 5.5716e-06 0:00:16 725
1276 2.2460e-06 7.1082e-07 5.8764e-07 1.1986e-06 8.9922e-09 4.0700e-06 5.0600e-06 0:00:13 724

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1277 2.1799e-06 6.9368e-07 5.7169e-07 1.2035e-06 8.7302e-09 3.7791e-06 4.5981e-06 0:00:10 723
1278 2.1135e-06 6.8265e-07 5.5752e-07 1.2079e-06 8.4628e-09 3.5288e-06 4.1991e-06 0:00:08 722
1279 2.0495e-06 6.7678e-07 5.4584e-07 1.2099e-06 8.2060e-09 3.3500e-06 3.9879e-06 0:00:06 721
1280 1.9874e-06 6.7604e-07 5.3607e-07 1.2082e-06 8.0065e-09 3.2834e-06 4.0917e-06 0:00:05 720
1281 1.9333e-06 6.7653e-07 5.2962e-07 1.2041e-06 7.9024e-09 3.3263e-06 4.3306e-06 0:00:04 719
1282 1.8839e-06 6.7984e-07 5.2774e-07 1.1975e-06 7.8529e-09 3.4276e-06 4.6174e-06 0:00:03 718
1283 1.8441e-06 6.9025e-07 5.3102e-07 1.1902e-06 7.8472e-09 3.5578e-06 4.9140e-06 0:00:03 717
1284 1.8199e-06 7.0329e-07 5.3931e-07 1.1820e-06 7.8785e-09 3.7004e-06 5.2046e-06 0:02:25 716
1285 1.8101e-06 7.2014e-07 5.4992e-07 1.1737e-06 7.9329e-09 3.8437e-06 5.4722e-06 0:01:56 715
1286 1.8088e-06 7.3759e-07 5.6073e-07 1.1647e-06 7.9924e-09 3.9774e-06 5.7126e-06 0:01:33 714
1287 1.8119e-06 7.5585e-07 5.7085e-07 1.1535e-06 8.0697e-09 4.1196e-06 5.9656e-06 0:01:14 713

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1288 1.7385e-06 7.8362e-07 5.7911e-07 1.1436e-06 8.1458e-09 4.2025e-06 6.1397e-06 0:00:59 712
1289 1.8502e-06 7.8286e-07 5.8661e-07 1.1270e-06 8.1041e-09 4.2755e-06 6.2873e-06 0:00:47 711
1290 1.7623e-06 8.0377e-07 5.9028e-07 1.0996e-06 8.1598e-09 4.3394e-06 6.4005e-06 0:00:38 710
1291 1.8717e-06 7.9501e-07 5.9328e-07 1.0771e-06 8.1171e-09 4.3816e-06 6.4945e-06 0:00:30 709
1292 1.7770e-06 8.0628e-07 5.9111e-07 1.0422e-06 8.1514e-09 4.4113e-06 6.5460e-06 0:00:24 708
1293 1.8843e-06 7.8757e-07 5.8834e-07 1.0150e-06 8.0654e-09 4.4136e-06 6.5446e-06 0:00:19 707
1294 1.8691e-06 7.7404e-07 5.7982e-07 9.7706e-07 8.0546e-09 4.4073e-06 6.5416e-06 0:00:15 706
1295 1.7588e-06 7.7176e-07 5.6937e-07 9.3820e-07 8.0663e-09 4.3835e-06 6.4754e-06 0:00:12 705
1296 1.8479e-06 7.4249e-07 5.6059e-07 9.1290e-07 7.9209e-09 4.3044e-06 6.3346e-06 0:00:10 704
1297 1.8184e-06 7.1749e-07 5.4438e-07 8.7955e-07 7.8333e-09 4.2112e-06 6.1688e-06 0:00:08 703
1298 1.7778e-06 6.9152e-07 5.2804e-07 8.4806e-07 7.7408e-09 4.1011e-06 5.9716e-06 0:00:06 702

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1299 1.7466e-06 6.6290e-07 5.1179e-07 8.2605e-07 7.6168e-09 3.9720e-06 5.7301e-06 0:00:05 701

1300 1.7185e-06 6.3246e-07 4.9513e-07 8.1028e-07 7.4606e-09 3.8179e-06 5.4530e-06 0:00:04 700
1301 1.6874e-06 6.0194e-07 4.7886e-07 8.0268e-07 7.2889e-09 3.6419e-06 5.1468e-06 0:00:03 699
1302 1.6494e-06 5.7214e-07 4.6391e-07 8.0241e-07 7.1076e-09 3.4456e-06 4.8257e-06 0:00:03 698
1303 1.6056e-06 5.4416e-07 4.5056e-07 8.0666e-07 6.9205e-09 3.2385e-06 4.4902e-06 0:00:02 697
1304 1.5632e-06 5.1966e-07 4.3840e-07 8.1368e-07 6.7232e-09 3.0235e-06 4.1343e-06 0:00:02 696
1305 1.5244e-06 5.0314e-07 4.2646e-07 8.2038e-07 6.5139e-09 2.8082e-06 3.7788e-06 0:00:01 695
1306 1.4845e-06 4.9250e-07 4.1593e-07 8.2727e-07 6.2885e-09 2.6145e-06 3.4544e-06 0:02:20 694
1307 1.4460e-06 4.8616e-07 4.0600e-07 8.3417e-07 6.0637e-09 2.4490e-06 3.1889e-06 0:01:52 693
1308 1.4070e-06 4.8271e-07 3.9783e-07 8.3914e-07 5.8514e-09 2.3427e-06 3.0223e-06 0:01:29 692
1309 1.3702e-06 4.8094e-07 3.9042e-07 8.4211e-07 5.6646e-09 2.3128e-06 2.9509e-06 0:01:11 691

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1310 1.3396e-06 4.8383e-07 3.8484e-07 8.4355e-07 5.5152e-09 2.3367e-06 3.0360e-06 0:00:57 690
1311 1.3146e-06 4.8927e-07 3.8079e-07 8.4293e-07 5.4519e-09 2.4116e-06 3.2180e-06 0:00:45 689
1312 1.2954e-06 4.9685e-07 3.7887e-07 8.4203e-07 5.4421e-09 2.5163e-06 3.4301e-06 0:00:36 688
1313 1.2853e-06 5.0818e-07 3.8074e-07 8.4146e-07 5.4696e-09 2.6495e-06 3.6575e-06 0:00:29 687
1314 1.2319e-06 5.2723e-07 3.8731e-07 8.4387e-07 5.5398e-09 2.7557e-06 3.8593e-06 0:00:23 686
1315 1.3067e-06 5.3146e-07 3.9381e-07 8.4279e-07 5.5641e-09 2.8650e-06 4.0572e-06 0:00:19 685
1316 1.2519e-06 5.5372e-07 4.0299e-07 8.3783e-07 5.6383e-09 2.9637e-06 4.2482e-06 0:00:15 684
1317 1.3372e-06 5.5732e-07 4.0988e-07 8.3487e-07 5.6581e-09 3.0648e-06 4.4305e-06 0:00:12 683
1318 1.2828e-06 5.7579e-07 4.1607e-07 8.2487e-07 5.7308e-09 3.1477e-06 4.5774e-06 0:00:09 682
1319 1.3754e-06 5.7269e-07 4.2095e-07 8.1641e-07 5.7417e-09 3.2151e-06 4.6971e-06 0:00:08 681
1320 1.3120e-06 5.8504e-07 4.2335e-07 7.9945e-07 5.7937e-09 3.2738e-06 4.7829e-06 0:00:06 680

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1321 1.4031e-06 5.7601e-07 4.2409e-07 7.8543e-07 5.7664e-09 3.3065e-06 4.8184e-06 0:00:05 679
1322 1.3338e-06 5.8130e-07 4.2168e-07 7.6133e-07 5.7990e-09 3.3300e-06 4.8276e-06 0:00:04 678
1323 1.4135e-06 5.6626e-07 4.1885e-07 7.4396e-07 5.7357e-09 3.3157e-06 4.7925e-06 0:00:03 677

1324 1.3370e-06 5.6371e-07 4.1154e-07 7.1656e-07 5.7382e-09 3.2982e-06 4.7321e-06 0:00:02 676
1325 1.4071e-06 5.4348e-07 4.0483e-07 6.9831e-07 5.6622e-09 3.2414e-06 4.6269e-06 0:00:02 675
1326 1.3305e-06 5.3333e-07 3.9380e-07 6.7083e-07 5.6529e-09 3.1888e-06 4.5057e-06 0:02:16 674
1327 1.3853e-06 5.0957e-07 3.8466e-07 6.5612e-07 5.5249e-09 3.0998e-06 4.3431e-06 0:01:49 673
1328 1.3560e-06 4.8591e-07 3.7059e-07 6.3822e-07 5.4266e-09 2.9975e-06 4.1539e-06 0:01:27 672
1329 1.3215e-06 4.6236e-07 3.5722e-07 6.2377e-07 5.3276e-09 2.8776e-06 3.9332e-06 0:01:10 671
1330 1.2919e-06 4.3905e-07 3.4450e-07 6.1435e-07 5.2078e-09 2.7390e-06 3.6920e-06 0:00:56 670
1331 1.2611e-06 4.1655e-07 3.3339e-07 6.1136e-07 5.0793e-09 2.5865e-06 3.4362e-06 0:00:44 669

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1332 1.2278e-06 3.9660e-07 3.2395e-07 6.1287e-07 4.9487e-09 2.4267e-06 3.1709e-06 0:00:35 668
1333 1.1919e-06 3.8074e-07 3.1471e-07 6.1554e-07 4.8153e-09 2.2596e-06 2.9000e-06 0:00:28 667
1334 1.1585e-06 3.6829e-07 3.0587e-07 6.1856e-07 4.6731e-09 2.0967e-06 2.6349e-06 0:00:23 666
1335 1.1249e-06 3.5961e-07 2.9773e-07 6.2161e-07 4.5319e-09 1.9461e-06 2.3958e-06 0:00:18 665
1336 1.0912e-06 3.5404e-07 2.9056e-07 6.2427e-07 4.3864e-09 1.8166e-06 2.1879e-06 0:00:14 664
1337 1.0587e-06 3.5088e-07 2.8440e-07 6.2583e-07 4.2481e-09 1.7240e-06 2.0651e-06 0:00:12 663
1338 1.0266e-06 3.5052e-07 2.7925e-07 6.2527e-07 4.1371e-09 1.6921e-06 2.1113e-06 0:00:09 662
1339 9.9866e-07 3.5074e-07 2.7574e-07 6.2344e-07 4.0775e-09 1.7183e-06 2.2362e-06 0:00:07 661
1340 9.7371e-07 3.5282e-07 2.7446e-07 6.2041e-07 4.0531e-09 1.7744e-06 2.3881e-06 0:00:06 660
1341 9.5383e-07 3.5855e-07 2.7565e-07 6.1672e-07 4.0503e-09 1.8446e-06 2.5434e-06 0:00:05 659
1342 9.4227e-07 3.6569e-07 2.7975e-07 6.1287e-07 4.0703e-09 1.9217e-06 2.6976e-06 0:00:04 658

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1343 9.3842e-07 3.7487e-07 2.8505e-07 6.0898e-07 4.1006e-09 1.9988e-06 2.8386e-06 0:00:03 657
1344 9.3996e-07 3.8438e-07 2.9085e-07 6.0479e-07 4.1454e-09 2.0824e-06 2.9830e-06 0:00:02 656
1345 9.0103e-07 3.9930e-07 2.9600e-07 6.0215e-07 4.1896e-09 2.1379e-06 3.0915e-06 0:02:13 655
1346 9.5742e-07 4.0083e-07 3.0055e-07 5.9602e-07 4.1851e-09 2.1872e-06 3.1871e-06 0:01:46 654
1347 9.1419e-07 4.1430e-07 3.0446e-07 5.8475e-07 4.2193e-09 2.2300e-06 3.2692e-06 0:01:25 653

1348 9.7222e-07 4.1211e-07 3.0708e-07 5.7539e-07 4.2099e-09 2.2674e-06 3.3390e-06 0:01:08 652
1349 9.2538e-07 4.2046e-07 3.0798e-07 5.6004e-07 4.2314e-09 2.2938e-06 3.3889e-06 0:00:54 651
1350 9.8432e-07 4.1343e-07 3.0806e-07 5.4734e-07 4.2048e-09 2.3068e-06 3.4187e-06 0:00:43 650
1351 9.3289e-07 4.1575e-07 3.0514e-07 5.2842e-07 4.2207e-09 2.3189e-06 3.4250e-06 0:00:35 649
1352 9.8451e-07 4.0377e-07 3.0245e-07 5.1373e-07 4.1761e-09 2.3077e-06 3.4103e-06 0:00:28 648
1353 9.2549e-07 4.0095e-07 2.9639e-07 4.9296e-07 4.1793e-09 2.2934e-06 3.3718e-06 0:00:22 647

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1354 9.6916e-07 3.8626e-07 2.9149e-07 4.7902e-07 4.1063e-09 2.2525e-06 3.2959e-06 0:00:18 646
1355 9.5305e-07 3.7365e-07 2.8301e-07 4.6073e-07 4.0663e-09 2.2042e-06 3.2047e-06 0:00:14 645
1356 9.3545e-07 3.6033e-07 2.7455e-07 4.4432e-07 4.0173e-09 2.1463e-06 3.1004e-06 0:00:11 644
1357 9.2039e-07 3.4540e-07 2.6610e-07 4.3320e-07 3.9545e-09 2.0783e-06 2.9754e-06 0:00:09 643
1358 9.0351e-07 3.2934e-07 2.5743e-07 4.2536e-07 3.8731e-09 1.9971e-06 2.8306e-06 0:00:07 642
1359 8.8556e-07 3.1325e-07 2.4887e-07 4.2136e-07 3.7854e-09 1.9044e-06 2.6701e-06 0:00:06 641
1360 8.6507e-07 2.9755e-07 2.4123e-07 4.2114e-07 3.6917e-09 1.8014e-06 2.5029e-06 0:00:05 640
1361 8.4208e-07 2.8301e-07 2.3434e-07 4.2325e-07 3.5955e-09 1.6927e-06 2.3270e-06 0:00:04 639
1362 8.1961e-07 2.7063e-07 2.2798e-07 4.2669e-07 3.4932e-09 1.5794e-06 2.1395e-06 0:00:03 638
1363 7.9959e-07 2.6226e-07 2.2167e-07 4.3002e-07 3.3838e-09 1.4660e-06 1.9511e-06 0:00:02 637
1364 7.7899e-07 2.5672e-07 2.1615e-07 4.3336e-07 3.2658e-09 1.3644e-06 1.7812e-06 0:00:02 636

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1365 7.5775e-07 2.5346e-07 2.1095e-07 4.3672e-07 3.1516e-09 1.2766e-06 1.6426e-06 0:00:01 635
1366 7.3643e-07 2.5151e-07 2.0665e-07 4.3912e-07 3.0423e-09 1.2188e-06 1.5519e-06 0:00:01 634
1367 7.1650e-07 2.5063e-07 2.0276e-07 4.4043e-07 2.9461e-09 1.2036e-06 1.5288e-06 0:02:08 633
1368 6.9977e-07 2.5191e-07 1.9986e-07 4.4082e-07 2.8767e-09 1.2186e-06 1.5871e-06 0:01:42 632
1369 6.8661e-07 2.5449e-07 1.9784e-07 4.4020e-07 2.8494e-09 1.2586e-06 1.6832e-06 0:01:21 631
1370 6.7636e-07 2.5853e-07 1.9707e-07 4.3940e-07 2.8474e-09 1.3131e-06 1.7943e-06 0:01:05 630
1371 6.7057e-07 2.6460e-07 1.9852e-07 4.3895e-07 2.8645e-09 1.3824e-06 1.9132e-06 0:00:52 629

1372 6.4228e-07 2.7438e-07 2.0218e-07 4.3993e-07 2.9013e-09 1.4368e-06 2.0163e-06 0:00:41 628
1373 6.8182e-07 2.7682e-07 2.0584e-07 4.3910e-07 2.9139e-09 1.4932e-06 2.1175e-06 0:00:33 627
1374 6.5292e-07 2.8839e-07 2.1057e-07 4.3608e-07 2.9509e-09 1.5430e-06 2.2135e-06 0:00:26 626
1375 6.9645e-07 2.9023e-07 2.1416e-07 4.3405e-07 2.9585e-09 1.5942e-06 2.3068e-06 0:00:21 625

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1376 6.6830e-07 2.9984e-07 2.1729e-07 4.2829e-07 2.9957e-09 1.6361e-06 2.3827e-06 0:00:17 624
1377 7.1672e-07 2.9812e-07 2.1983e-07 4.2355e-07 2.9980e-09 1.6699e-06 2.4434e-06 0:00:13 623
1378 6.8371e-07 3.0447e-07 2.2107e-07 4.1423e-07 3.0233e-09 1.6990e-06 2.4872e-06 0:00:11 622
1379 7.3068e-07 2.9958e-07 2.2146e-07 4.0656e-07 3.0079e-09 1.7155e-06 2.5059e-06 0:00:09 621
1380 6.9384e-07 3.0228e-07 2.2006e-07 3.9404e-07 3.0237e-09 1.7276e-06 2.5100e-06 0:00:07 620
1381 7.3471e-07 2.9440e-07 2.1848e-07 3.8468e-07 2.9906e-09 1.7198e-06 2.4931e-06 0:00:05 619
1382 6.9430e-07 2.9302e-07 2.1447e-07 3.7034e-07 2.9918e-09 1.7101e-06 2.4618e-06 0:00:04 618
1383 7.2993e-07 2.8249e-07 2.1098e-07 3.6071e-07 2.9530e-09 1.6804e-06 2.4066e-06 0:00:03 617
1384 6.8980e-07 2.7723e-07 2.0512e-07 3.4648e-07 2.9480e-09 1.6525e-06 2.3435e-06 0:00:03 616
1385 7.1788e-07 2.6483e-07 2.0029e-07 3.3874e-07 2.8814e-09 1.6058e-06 2.2591e-06 0:00:02 615
1386 7.0205e-07 2.5237e-07 1.9293e-07 3.2975e-07 2.8291e-09 1.5524e-06 2.1599e-06 0:00:02 614

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1387 6.8359e-07 2.4007e-07 1.8603e-07 3.2239e-07 2.7763e-09 1.4903e-06 2.0453e-06 0:00:01 613
1388 6.6790e-07 2.2792e-07 1.7941e-07 3.1765e-07 2.7134e-09 1.4176e-06 1.9194e-06 0:02:04 612
1389 6.5177e-07 2.1617e-07 1.7372e-07 3.1624e-07 2.6457e-09 1.3382e-06 1.7875e-06 0:01:39 611
1390 6.3442e-07 2.0572e-07 1.6882e-07 3.1732e-07 2.5769e-09 1.2556e-06 1.6518e-06 0:01:19 610
1391 6.1615e-07 1.9744e-07 1.6404e-07 3.1898e-07 2.5062e-09 1.1688e-06 1.5105e-06 0:01:03 609
1392 5.9932e-07 1.9100e-07 1.5940e-07 3.2073e-07 2.4299e-09 1.0843e-06 1.3727e-06 0:00:50 608
1393 5.8216e-07 1.8674e-07 1.5520e-07 3.2249e-07 2.3551e-09 1.0062e-06 1.2482e-06 0:00:40 607
1394 5.6486e-07 1.8399e-07 1.5148e-07 3.2407e-07 2.2786e-09 9.4000e-07 1.1423e-06 0:00:32 606
1395 5.4819e-07 1.8243e-07 1.4825e-07 3.2500e-07 2.2065e-09 8.9243e-07 1.0758e-06 0:00:26 605

1396 5.3191e-07 1.8239e-07 1.4557e-07 3.2484e-07 2.1474e-09 8.7782e-07 1.0983e-06 0:00:20 604
1397 5.1769e-07 1.8271e-07 1.4372e-07 3.2398e-07 2.1153e-09 8.9289e-07 1.1639e-06 0:00:16 603

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1398 5.0548e-07 1.8403e-07 1.4301e-07 3.2262e-07 2.1035e-09 9.2320e-07 1.2424e-06 0:00:13 602
1399 4.9563e-07 1.8714e-07 1.4346e-07 3.2086e-07 2.1022e-09 9.6065e-07 1.3229e-06 0:00:10 601
1400 4.9009e-07 1.9104e-07 1.4550e-07 3.1914e-07 2.1145e-09 1.0020e-06 1.4034e-06 0:00:08 600
1401 4.8843e-07 1.9584e-07 1.4826e-07 3.1741e-07 2.1361e-09 1.0496e-06 1.4874e-06 0:00:07 599
1402 4.6915e-07 2.0340e-07 1.5152e-07 3.1689e-07 2.1614e-09 1.0825e-06 1.5489e-06 0:00:05 598
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1404 4.7358e-07 2.1272e-07 1.5662e-07 3.1041e-07 2.1857e-09 1.1419e-06 1.6606e-06 0:00:03 596
1405 5.0404e-07 2.1300e-07 1.5878e-07 3.0663e-07 2.1860e-09 1.1680e-06 1.7103e-06 0:00:03 595
1406 4.8146e-07 2.1864e-07 1.6002e-07 3.0023e-07 2.2035e-09 1.1883e-06 1.7475e-06 0:00:02 594
1407 5.1322e-07 2.1613e-07 1.6100e-07 2.9464e-07 2.1937e-09 1.2016e-06 1.7751e-06 0:00:02 593
1408 4.8750e-07 2.1921e-07 1.6046e-07 2.8572e-07 2.2043e-09 1.2129e-06 1.7903e-06 0:00:01 592

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1409 5.1731e-07 2.1417e-07 1.5974e-07 2.7853e-07 2.1886e-09 1.2144e-06 1.7925e-06 0:01:59 591
1410 4.8842e-07 2.1414e-07 1.5739e-07 2.6795e-07 2.1927e-09 1.2141e-06 1.7846e-06 0:01:35 590
1411 5.1298e-07 2.0703e-07 1.5541e-07 2.6036e-07 2.1653e-09 1.2002e-06 1.7616e-06 0:01:16 589
1412 4.8311e-07 2.0458e-07 1.5159e-07 2.4966e-07 2.1646e-09 1.1862e-06 1.7266e-06 0:01:01 588
1413 5.0484e-07 1.9637e-07 1.4847e-07 2.4305e-07 2.1245e-09 1.1585e-06 1.6762e-06 0:00:49 587
1414 4.9578e-07 1.8852e-07 1.4365e-07 2.3489e-07 2.0947e-09 1.1274e-06 1.6207e-06 0:00:39 586
1415 4.8490e-07 1.8050e-07 1.3903e-07 2.2847e-07 2.0625e-09 1.0918e-06 1.5558e-06 0:00:31 585
1416 4.7502e-07 1.7210e-07 1.3444e-07 2.2386e-07 2.0219e-09 1.0485e-06 1.4787e-06 0:00:25 584
1417 4.6557e-07 1.6365e-07 1.2992e-07 2.2145e-07 1.9748e-09 9.9896e-07 1.3927e-06 0:00:20 583
1418 4.5471e-07 1.5538e-07 1.2595e-07 2.2131e-07 1.9249e-09 9.4413e-07 1.3029e-06 0:00:16 582
1419 4.4253e-07 1.4773e-07 1.2242e-07 2.2250e-07 1.8745e-09 8.8647e-07 1.2096e-06 0:00:13 581

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1420 4.3045e-07 1.4134e-07 1.1904e-07 2.2429e-07 1.8205e-09 8.2631e-07 1.1105e-06 0:00:10 580
1421 4.1981e-07 1.3695e-07 1.1569e-07 2.2596e-07 1.7632e-09 7.6627e-07 1.0110e-06 0:00:08 579
1422 4.0869e-07 1.3407e-07 1.1277e-07 2.2760e-07 1.7019e-09 7.1258e-07 9.2230e-07 0:00:06 578
1423 3.9737e-07 1.3236e-07 1.1004e-07 2.2922e-07 1.6438e-09 6.6654e-07 8.4954e-07 0:00:05 577
1424 3.8602e-07 1.3132e-07 1.0776e-07 2.3029e-07 1.5870e-09 6.3572e-07 8.0074e-07 0:00:04 576
1425 3.7546e-07 1.3097e-07 1.0573e-07 2.3077e-07 1.5378e-09 6.2801e-07 7.9573e-07 0:00:03 575
1426 3.6644e-07 1.3161e-07 1.0425e-07 2.3074e-07 1.5056e-09 6.3743e-07 8.3163e-07 0:00:03 574
1427 3.5938e-07 1.3296e-07 1.0326e-07 2.3023e-07 1.4931e-09 6.5908e-07 8.8291e-07 0:00:02 573
1428 3.5379e-07 1.3517e-07 1.0296e-07 2.2968e-07 1.4924e-09 6.8757e-07 9.4124e-07 0:00:02 572
1429 3.5066e-07 1.3836e-07 1.0392e-07 2.2931e-07 1.5030e-09 7.2416e-07 1.0046e-06 0:00:01 571
1430 3.3594e-07 1.4348e-07 1.0592e-07 2.2973e-07 1.5218e-09 7.5222e-07 1.0575e-06 0:01:55 570

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1431 3.5646e-07 1.4477e-07 1.0793e-07 2.2925e-07 1.5284e-09 7.8146e-07 1.1098e-06 0:01:32 569
1432 3.4112e-07 1.5078e-07 1.1033e-07 2.2762e-07 1.5464e-09 8.0686e-07 1.1587e-06 0:01:13 568
1433 3.6356e-07 1.5172e-07 1.1222e-07 2.2646e-07 1.5498e-09 8.3286e-07 1.2063e-06 0:00:59 567
1434 3.4876e-07 1.5671e-07 1.1383e-07 2.2331e-07 1.5685e-09 8.5388e-07 1.2448e-06 0:00:47 566
1435 3.7375e-07 1.5574e-07 1.1511e-07 2.2063e-07 1.5683e-09 8.7062e-07 1.2755e-06 0:00:37 565
1436 3.5625e-07 1.5899e-07 1.1567e-07 2.1553e-07 1.5805e-09 8.8485e-07 1.2969e-06 0:00:30 564
1437 3.8042e-07 1.5635e-07 1.1580e-07 2.1136e-07 1.5718e-09 8.9271e-07 1.3058e-06 0:00:24 563
1438 3.6093e-07 1.5766e-07 1.1496e-07 2.0472e-07 1.5799e-09 8.9862e-07 1.3072e-06 0:00:19 562
1439 3.8191e-07 1.5348e-07 1.1407e-07 1.9970e-07 1.5629e-09 8.9426e-07 1.2989e-06 0:00:15 561
1440 3.6078e-07 1.5270e-07 1.1190e-07 1.9218e-07 1.5636e-09 8.8904e-07 1.2824e-06 0:00:12 560
1441 3.7909e-07 1.4721e-07 1.1006e-07 1.8713e-07 1.5436e-09 8.7348e-07 1.2538e-06 0:00:10 559

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1442 3.5822e-07 1.4447e-07 1.0696e-07 1.7971e-07 1.5412e-09 8.5881e-07 1.2208e-06 0:00:08 558

1443 3.7274e-07 1.3800e-07 1.0444e-07 1.7569e-07 1.5066e-09 8.3448e-07 1.1766e-06 0:00:06 557
1444 3.6447e-07 1.3149e-07 1.0062e-07 1.7113e-07 1.4791e-09 8.0677e-07 1.1252e-06 0:00:05 556
1445 3.5490e-07 1.2509e-07 9.7054e-08 1.6739e-07 1.4511e-09 7.7447e-07 1.0662e-06 0:00:04 555
1446 3.4668e-07 1.1877e-07 9.3628e-08 1.6500e-07 1.4184e-09 7.3657e-07 1.0011e-06 0:00:03 554
1447 3.3833e-07 1.1270e-07 9.0724e-08 1.6438e-07 1.3826e-09 6.9546e-07 9.3336e-07 0:00:03 553
1448 3.2925e-07 1.0721e-07 8.8198e-08 1.6501e-07 1.3465e-09 6.5227e-07 8.6242e-07 0:00:02 552
1449 3.1981e-07 1.0287e-07 8.5700e-08 1.6599e-07 1.3088e-09 6.0706e-07 7.8863e-07 0:00:02 551
1450 3.1123e-07 9.9528e-08 8.3281e-08 1.6695e-07 1.2680e-09 5.6299e-07 7.1635e-07 0:00:01 550
1451 3.0239e-07 9.7346e-08 8.1095e-08 1.6794e-07 1.2282e-09 5.2236e-07 6.5162e-07 0:00:01 549
1452 2.9350e-07 9.5934e-08 7.9168e-08 1.6883e-07 1.1876e-09 4.8815e-07 5.9739e-07 0:01:50 548

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1453 2.8482e-07 9.5104e-08 7.7475e-08 1.6934e-07 1.1495e-09 4.6371e-07 5.6223e-07 0:01:28 547
1454 2.7650e-07 9.5092e-08 7.6056e-08 1.6930e-07 1.1179e-09 4.5689e-07 5.7321e-07 0:01:10 546
1455 2.6924e-07 9.5321e-08 7.5078e-08 1.6884e-07 1.1012e-09 4.6543e-07 6.0755e-07 0:00:56 545
1456 2.6313e-07 9.6098e-08 7.4653e-08 1.6815e-07 1.0956e-09 4.8148e-07 6.4818e-07 0:00:45 544
1457 2.5818e-07 9.7795e-08 7.4833e-08 1.6729e-07 1.0954e-09 5.0134e-07 6.9020e-07 0:00:36 543
1458 2.5544e-07 9.9907e-08 7.5856e-08 1.6644e-07 1.1025e-09 5.2338e-07 7.3241e-07 0:00:29 542
1459 2.5482e-07 1.0245e-07 7.7309e-08 1.6562e-07 1.1141e-09 5.4847e-07 7.7609e-07 0:00:23 541
1460 2.4491e-07 1.0648e-07 7.9055e-08 1.6543e-07 1.1278e-09 5.6611e-07 8.0916e-07 0:00:18 540
1461 2.5924e-07 1.0724e-07 8.0413e-08 1.6444e-07 1.1283e-09 5.8325e-07 8.4088e-07 0:00:15 539
1462 2.4776e-07 1.1133e-07 8.1779e-08 1.6229e-07 1.1401e-09 5.9780e-07 8.6908e-07 0:00:12 538
1463 2.6398e-07 1.1140e-07 8.2919e-08 1.6038e-07 1.1407e-09 6.1176e-07 8.9551e-07 0:00:09 537

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1464 2.5222e-07 1.1432e-07 8.3610e-08 1.5708e-07 1.1495e-09 6.2259e-07 9.1513e-07 0:00:07 536
1465 2.6899e-07 1.1297e-07 8.4119e-08 1.5421e-07 1.1445e-09 6.2962e-07 9.2946e-07 0:00:06 535
1466 2.5559e-07 1.1456e-07 8.3828e-08 1.4959e-07 1.1500e-09 6.3589e-07 9.3710e-07 0:00:05 534

1467 2.7122e-07 1.1191e-07 8.3430e-08 1.4588e-07 1.1417e-09 6.3656e-07 9.3760e-07 0:00:04 533
1468 2.5609e-07 1.1191e-07 8.2206e-08 1.4038e-07 1.1439e-09 6.3627e-07 9.3317e-07 0:00:03 532
1469 2.6906e-07 1.0821e-07 8.1137e-08 1.3647e-07 1.1295e-09 6.2871e-07 9.2021e-07 0:00:02 531
1470 2.5355e-07 1.0690e-07 7.9141e-08 1.3086e-07 1.1294e-09 6.2127e-07 9.0162e-07 0:00:02 530
1471 2.6502e-07 1.0261e-07 7.7494e-08 1.2741e-07 1.1082e-09 6.0668e-07 8.7512e-07 0:00:02 529
1472 2.6028e-07 9.8493e-08 7.4973e-08 1.2317e-07 1.0926e-09 5.9034e-07 8.4519e-07 0:00:01 528
1473 2.5448e-07 9.4291e-08 7.2531e-08 1.1981e-07 1.0757e-09 5.7148e-07 8.1083e-07 0:01:46 527
1474 2.4929e-07 8.9885e-08 7.0129e-08 1.1742e-07 1.0545e-09 5.4868e-07 7.7036e-07 0:01:25 526

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1475 2.4421e-07 8.5445e-08 6.7759e-08 1.1618e-07 1.0298e-09 5.2257e-07 7.2535e-07 0:01:08 525
1476 2.3844e-07 8.1112e-08 6.5705e-08 1.1611e-07 1.0038e-09 4.9376e-07 6.7805e-07 0:00:54 524
1477 2.3202e-07 7.7121e-08 6.3874e-08 1.1673e-07 9.7769e-10 4.6345e-07 6.2923e-07 0:00:43 523
1478 2.2562e-07 7.3847e-08 6.2102e-08 1.1764e-07 9.4947e-10 4.3182e-07 5.7714e-07 0:00:35 522
1479 2.2000e-07 7.1557e-08 6.0357e-08 1.1848e-07 9.1932e-10 4.0037e-07 5.2487e-07 0:00:28 521
1480 2.1409e-07 7.0070e-08 5.8828e-08 1.1932e-07 8.8780e-10 3.7219e-07 4.7872e-07 0:00:22 520
1481 2.0808e-07 6.9166e-08 5.7416e-08 1.2015e-07 8.5743e-10 3.4814e-07 4.4073e-07 0:00:18 519
1482 2.0207e-07 6.8606e-08 5.6217e-08 1.2066e-07 8.2797e-10 3.3193e-07 4.1473e-07 0:00:14 518
1483 1.9650e-07 6.8458e-08 5.5177e-08 1.2087e-07 8.0249e-10 3.2808e-07 4.1509e-07 0:00:11 517
1484 1.9172e-07 6.8764e-08 5.4417e-08 1.2079e-07 7.8715e-10 3.3373e-07 4.3590e-07 0:00:09 516
1485 1.8795e-07 6.9450e-08 5.3922e-08 1.2047e-07 7.8131e-10 3.4522e-07 4.6313e-07 0:00:07 515

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1486 1.8494e-07 7.0638e-08 5.3809e-08 1.2012e-07 7.8114e-10 3.6000e-07 4.9350e-07 0:00:06 514
1487 1.8330e-07 7.2300e-08 5.4379e-08 1.1985e-07 7.8721e-10 3.7910e-07 5.2678e-07 0:00:05 513
1488 1.7563e-07 7.5004e-08 5.5450e-08 1.2002e-07 7.9714e-10 3.9356e-07 5.5394e-07 0:00:04 512
1489 1.8629e-07 7.5700e-08 5.6506e-08 1.1970e-07 8.0065e-10 4.0863e-07 5.8092e-07 0:00:03 511
1490 1.7815e-07 7.8839e-08 5.7732e-08 1.1879e-07 8.1000e-10 4.2171e-07 6.0605e-07 0:00:02 510

1491 1.8982e-07 7.9336e-08 5.8722e-08 1.1813e-07 8.1185e-10 4.3510e-07 6.3058e-07 0:00:02 509
1492 1.8205e-07 8.1922e-08 5.9554e-08 1.1643e-07 8.2136e-10 4.4585e-07 6.5044e-07 0:00:01 508
1493 1.9502e-07 8.1401e-08 6.0216e-08 1.1498e-07 8.2084e-10 4.5441e-07 6.6621e-07 0:01:43 507
1494 1.8583e-07 8.3067e-08 6.0490e-08 1.1226e-07 8.2700e-10 4.6152e-07 6.7707e-07 0:01:22 506
1495 1.9837e-07 8.1670e-08 6.0543e-08 1.1004e-07 8.2222e-10 4.6544e-07 6.8162e-07 0:01:05 505
1496 1.8812e-07 8.2299e-08 6.0076e-08 1.0653e-07 8.2617e-10 4.6834e-07 6.8225e-07 0:00:52 504

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1497 1.9894e-07 8.0080e-08 5.9592e-08 1.0388e-07 8.1735e-10 4.6586e-07 6.7785e-07 0:00:42 503
1498 1.8786e-07 7.9642e-08 5.8436e-08 9.9933e-08 8.1772e-10 4.6301e-07 6.6899e-07 0:00:33 502
1499 1.9730e-07 7.6762e-08 5.7467e-08 9.7283e-08 8.0715e-10 4.5476e-07 6.5386e-07 0:00:27 501
1500 1.8641e-07 7.5313e-08 5.5821e-08 9.3415e-08 8.0575e-10 4.4697e-07 6.3638e-07 0:00:21 500
1501 1.9391e-07 7.1916e-08 5.4492e-08 9.1309e-08 7.8749e-10 4.3413e-07 6.1306e-07 0:00:17 499
1502 1.8955e-07 6.8502e-08 5.2492e-08 8.8988e-08 7.7297e-10 4.1964e-07 5.8639e-07 0:00:14 498
1503 1.8456e-07 6.5165e-08 5.0631e-08 8.7067e-08 7.5823e-10 4.0278e-07 5.5567e-07 0:00:11 497
1504 1.8026e-07 6.1879e-08 4.8850e-08 8.5854e-08 7.4107e-10 3.8297e-07 5.2213e-07 0:00:09 496
1505 1.7593e-07 5.8731e-08 4.7355e-08 8.5575e-08 7.2224e-10 3.6159e-07 4.8677e-07 0:00:07 495
1506 1.7118e-07 5.5868e-08 4.6044e-08 8.5934e-08 7.0331e-10 3.3904e-07 4.4977e-07 0:00:05 494
1507 1.6629e-07 5.3611e-08 4.4745e-08 8.6475e-08 6.8340e-10 3.1552e-07 4.1133e-07 0:00:04 493

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1508 1.6188e-07 5.1898e-08 4.3486e-08 8.6990e-08 6.6182e-10 2.9260e-07 3.7361e-07 0:00:04 492
1509 1.5730e-07 5.0787e-08 4.2352e-08 8.7524e-08 6.4088e-10 2.7156e-07 3.4013e-07 0:00:03 491
1510 1.5272e-07 5.0076e-08 4.1354e-08 8.8012e-08 6.1949e-10 2.5393e-07 3.1219e-07 0:00:02 490
1511 1.4821e-07 4.9655e-08 4.0470e-08 8.8280e-08 5.9951e-10 2.4147e-07 2.9401e-07 0:00:02 489
1512 1.4394e-07 4.9651e-08 3.9734e-08 8.8285e-08 5.8272e-10 2.3827e-07 2.9973e-07 0:00:01 488
1513 1.4021e-07 4.9789e-08 3.9227e-08 8.8055e-08 5.7391e-10 2.4302e-07 3.1766e-07 0:00:01 487
1514 1.3712e-07 5.0224e-08 3.8993e-08 8.7712e-08 5.7105e-10 2.5150e-07 3.3876e-07 0:00:01 486

1515 1.3462e-07 5.1126e-08 3.9074e-08 8.7294e-08 5.7103e-10 2.6204e-07 3.6085e-07 0:00:01 485
1516 1.3326e-07 5.2247e-08 3.9599e-08 8.6878e-08 5.7483e-10 2.7366e-07 3.8285e-07 0:01:37 484
1517 1.3303e-07 5.3575e-08 4.0360e-08 8.6480e-08 5.8095e-10 2.8681e-07 4.0548e-07 0:01:18 483
1518 1.2788e-07 5.5700e-08 4.1279e-08 8.6404e-08 5.8823e-10 2.9612e-07 4.2301e-07 0:01:02 482

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1519 1.3553e-07 5.6086e-08 4.1988e-08 8.5926e-08 5.8853e-10 3.0509e-07 4.3968e-07 0:00:50 481
1520 1.2955e-07 5.8227e-08 4.2709e-08 8.4827e-08 5.9463e-10 3.1282e-07 4.5463e-07 0:00:40 480
1521 1.3814e-07 5.8238e-08 4.3298e-08 8.3846e-08 5.9527e-10 3.2018e-07 4.6846e-07 0:00:32 479
1522 1.3200e-07 5.9754e-08 4.3668e-08 8.2131e-08 5.9983e-10 3.2589e-07 4.7878e-07 0:00:25 478
1523 1.4082e-07 5.9047e-08 4.3928e-08 8.0648e-08 5.9740e-10 3.2960e-07 4.8620e-07 0:00:20 477
1524 1.3384e-07 5.9865e-08 4.3775e-08 7.8248e-08 6.0023e-10 3.3307e-07 4.9015e-07 0:00:16 476
1525 1.4202e-07 5.8481e-08 4.3565e-08 7.6330e-08 5.9584e-10 3.3337e-07 4.9026e-07 0:00:13 475
1526 1.3411e-07 5.8475e-08 4.2928e-08 7.3462e-08 5.9701e-10 3.3317e-07 4.8788e-07 0:00:10 474
1527 1.4095e-07 5.6542e-08 4.2361e-08 7.1439e-08 5.8942e-10 3.2914e-07 4.8068e-07 0:00:08 473
1528 1.3286e-07 5.5848e-08 4.1320e-08 6.8503e-08 5.8950e-10 3.2517e-07 4.7086e-07 0:00:07 472
1529 1.3890e-07 5.3597e-08 4.0456e-08 6.6706e-08 5.7831e-10 3.1748e-07 4.5699e-07 0:00:05 471

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1530 1.3642e-07 5.1435e-08 3.9137e-08 6.4509e-08 5.7015e-10 3.0890e-07 4.4108e-07 0:00:04 470
1531 1.3336e-07 4.9229e-08 3.7850e-08 6.2765e-08 5.6125e-10 2.9890e-07 4.2279e-07 0:00:03 469
1532 1.3063e-07 4.6919e-08 3.6592e-08 6.1528e-08 5.5015e-10 2.8689e-07 4.0149e-07 0:00:03 468
1533 1.2794e-07 4.4591e-08 3.5350e-08 6.0882e-08 5.3728e-10 2.7311e-07 3.7789e-07 0:00:02 467
1534 1.2489e-07 4.2327e-08 3.4283e-08 6.0856e-08 5.2373e-10 2.5800e-07 3.5303e-07 0:00:02 466
1535 1.2152e-07 4.0247e-08 3.3331e-08 6.1185e-08 5.1014e-10 2.4206e-07 3.2738e-07 0:00:01 465
1536 1.1815e-07 3.8568e-08 3.2401e-08 6.1651e-08 4.9541e-10 2.2546e-07 3.0004e-07 0:01:34 464
1537 1.1519e-07 3.7381e-08 3.1493e-08 6.2070e-08 4.7958e-10 2.0904e-07 2.7269e-07 0:01:15 463
1538 1.1206e-07 3.6614e-08 3.0695e-08 6.2506e-08 4.6334e-10 1.9427e-07 2.4870e-07 0:01:00 462

1539 1.0889e-07 3.6146e-08 2.9966e-08 6.2925e-08 4.4747e-10 1.8180e-07 2.2897e-07 0:00:48 461
1540 1.0572e-07 3.5852e-08 2.9337e-08 6.3173e-08 4.3224e-10 1.7335e-07 2.1539e-07 0:00:38 460

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1541 1.0279e-07 3.5794e-08 2.8800e-08 6.3267e-08 4.1900e-10 1.7151e-07 2.1696e-07 0:00:30 459
1542 1.0027e-07 3.5946e-08 2.8414e-08 6.3201e-08 4.1158e-10 1.7473e-07 2.2843e-07 0:00:24 458
1543 9.8279e-08 3.6301e-08 2.8173e-08 6.3016e-08 4.0884e-10 1.8080e-07 2.4287e-07 0:00:19 457
1544 9.6684e-08 3.6936e-08 2.8138e-08 6.2814e-08 4.0880e-10 1.8854e-07 2.5872e-07 0:00:15 456
1545 9.5827e-08 3.7798e-08 2.8451e-08 6.2644e-08 4.1214e-10 1.9851e-07 2.7618e-07 0:00:12 455
1546 9.1832e-08 3.9217e-08 2.9026e-08 6.2717e-08 4.1733e-10 2.0597e-07 2.9026e-07 0:00:10 454
1547 9.7381e-08 3.9585e-08 2.9581e-08 6.2524e-08 4.1914e-10 2.1376e-07 3.0417e-07 0:00:08 453
1548 9.3078e-08 4.1225e-08 3.0210e-08 6.2028e-08 4.2402e-10 2.2052e-07 3.1711e-07 0:00:06 452
1549 9.9156e-08 4.1483e-08 3.0725e-08 6.1656e-08 4.2503e-10 2.2741e-07 3.2975e-07 0:00:05 451
1550 9.5077e-08 4.2826e-08 3.1154e-08 6.0745e-08 4.2985e-10 2.3292e-07 3.3996e-07 0:00:04 450
1551 1.0181e-07 4.2547e-08 3.1493e-08 5.9960e-08 4.2943e-10 2.3729e-07 3.4806e-07 0:00:03 449

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1552 9.6994e-08 4.3405e-08 3.1626e-08 5.8514e-08 4.3257e-10 2.4088e-07 3.5358e-07 0:00:03 448
1553 1.0351e-07 4.2666e-08 3.1646e-08 5.7336e-08 4.3001e-10 2.4284e-07 3.5594e-07 0:00:02 447
1554 9.8123e-08 4.2973e-08 3.1390e-08 5.5486e-08 4.3197e-10 2.4427e-07 3.5623e-07 0:00:02 446
1555 1.0372e-07 4.1797e-08 3.1129e-08 5.4087e-08 4.2733e-10 2.4291e-07 3.5383e-07 0:00:01 445
1556 9.7916e-08 4.1553e-08 3.0516e-08 5.2019e-08 4.2751e-10 2.4135e-07 3.4910e-07 0:00:01 444
1557 1.0279e-07 4.0042e-08 3.0005e-08 5.0631e-08 4.2194e-10 2.3697e-07 3.4112e-07 0:01:29 443
1558 9.7101e-08 3.9275e-08 2.9135e-08 4.8617e-08 4.2116e-10 2.3285e-07 3.3189e-07 0:01:11 442
1559 1.0098e-07 3.7491e-08 2.8437e-08 4.7517e-08 4.1150e-10 2.2610e-07 3.1959e-07 0:00:57 441
1560 9.8692e-08 3.5700e-08 2.7393e-08 4.6334e-08 4.0385e-10 2.1852e-07 3.0578e-07 0:00:45 440
1561 9.6079e-08 3.3962e-08 2.6419e-08 4.5345e-08 3.9610e-10 2.0967e-07 2.8969e-07 0:00:36 439
1562 9.3833e-08 3.2248e-08 2.5492e-08 4.4728e-08 3.8711e-10 1.9932e-07 2.7231e-07 0:00:29 438

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1563 9.1583e-08 3.0614e-08 2.4719e-08 4.4605e-08 3.7723e-10 1.8816e-07 2.5381e-07 0:00:23 437
1564 8.9108e-08 2.9123e-08 2.4039e-08 4.4804e-08 3.6731e-10 1.7637e-07 2.3448e-07 0:00:18 436
1565 8.6565e-08 2.7951e-08 2.3361e-08 4.5098e-08 3.5682e-10 1.6412e-07 2.1442e-07 0:00:15 435
1566 8.4290e-08 2.7074e-08 2.2706e-08 4.5368e-08 3.4546e-10 1.5220e-07 1.9477e-07 0:00:12 434
1567 8.1916e-08 2.6505e-08 2.2118e-08 4.5656e-08 3.3446e-10 1.4127e-07 1.7744e-07 0:00:09 433
1568 7.9545e-08 2.6148e-08 2.1599e-08 4.5917e-08 3.2323e-10 1.3220e-07 1.6300e-07 0:00:07 432
1569 7.7203e-08 2.5933e-08 2.1139e-08 4.6055e-08 3.1277e-10 1.2586e-07 1.5373e-07 0:00:06 431
1570 7.4997e-08 2.5936e-08 2.0758e-08 4.6067e-08 3.0393e-10 1.2438e-07 1.5682e-07 0:00:05 430
1571 7.3081e-08 2.6015e-08 2.0495e-08 4.5949e-08 2.9935e-10 1.2698e-07 1.6618e-07 0:00:04 429
1572 7.1509e-08 2.6256e-08 2.0370e-08 4.5775e-08 2.9790e-10 1.3145e-07 1.7717e-07 0:00:03 428
1573 7.0235e-08 2.6733e-08 2.0412e-08 4.5570e-08 2.9792e-10 1.3703e-07 1.8877e-07 0:00:02 427

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1574 6.9557e-08 2.7328e-08 2.0684e-08 4.5365e-08 2.9996e-10 1.4315e-07 2.0023e-07 0:00:02 426
1575 6.9480e-08 2.8019e-08 2.1083e-08 4.5166e-08 3.0319e-10 1.5004e-07 2.1199e-07 0:00:02 425
1576 6.6802e-08 2.9138e-08 2.1566e-08 4.5138e-08 3.0702e-10 1.5493e-07 2.2124e-07 0:01:26 424
1577 7.0864e-08 2.9334e-08 2.1937e-08 4.4901e-08 3.0717e-10 1.5962e-07 2.2998e-07 0:01:09 423
1578 6.7751e-08 3.0453e-08 2.2315e-08 4.4332e-08 3.1038e-10 1.6370e-07 2.3788e-07 0:00:55 422
1579 7.2282e-08 3.0448e-08 2.2618e-08 4.3824e-08 3.1077e-10 1.6755e-07 2.4506e-07 0:00:44 421
1580 6.9066e-08 3.1235e-08 2.2813e-08 4.2929e-08 3.1315e-10 1.7054e-07 2.5047e-07 0:00:35 420
1581 7.3695e-08 3.0862e-08 2.2945e-08 4.2161e-08 3.1195e-10 1.7250e-07 2.5429e-07 0:00:28 419
1582 7.0051e-08 3.1283e-08 2.2863e-08 4.0908e-08 3.1342e-10 1.7435e-07 2.5632e-07 0:00:22 418
1583 7.4329e-08 3.0558e-08 2.2752e-08 3.9913e-08 3.1110e-10 1.7448e-07 2.5630e-07 0:00:18 417
1584 7.0193e-08 3.0551e-08 2.2419e-08 3.8419e-08 3.1169e-10 1.7435e-07 2.5501e-07 0:00:14 416

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1585 7.3780e-08 2.9539e-08 2.2118e-08 3.7364e-08 3.0770e-10 1.7221e-07 2.5109e-07 0:00:11 415

1586 6.9566e-08 2.9170e-08 2.1574e-08 3.5828e-08 3.0777e-10 1.7009e-07 2.4588e-07 0:00:09 414
1587 7.2734e-08 2.7990e-08 2.1120e-08 3.4897e-08 3.0187e-10 1.6603e-07 2.3860e-07 0:00:07 413
1588 7.1436e-08 2.6854e-08 2.0430e-08 3.3756e-08 2.9759e-10 1.6153e-07 2.3020e-07 0:00:06 412
1589 6.9812e-08 2.5695e-08 1.9753e-08 3.2851e-08 2.9291e-10 1.5624e-07 2.2048e-07 0:00:05 411
1590 6.8383e-08 2.4485e-08 1.9094e-08 3.2212e-08 2.8710e-10 1.4991e-07 2.0927e-07 0:00:04 410
1591 6.6960e-08 2.3266e-08 1.8445e-08 3.1878e-08 2.8037e-10 1.4265e-07 1.9691e-07 0:00:03 409
1592 6.5355e-08 2.2085e-08 1.7890e-08 3.1871e-08 2.7331e-10 1.3473e-07 1.8388e-07 0:00:02 408
1593 6.3586e-08 2.1001e-08 1.7395e-08 3.2046e-08 2.6622e-10 1.2635e-07 1.7039e-07 0:00:02 407
1594 6.1817e-08 2.0139e-08 1.6908e-08 3.2285e-08 2.5853e-10 1.1765e-07 1.5605e-07 0:00:01 406
1595 6.0259e-08 1.9526e-08 1.6435e-08 3.2498e-08 2.5021e-10 1.0909e-07 1.4177e-07 0:00:01 405

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1596 5.8610e-08 1.9129e-08 1.6020e-08 3.2724e-08 2.4183e-10 1.0135e-07 1.2928e-07 0:01:22 404
1597 5.6943e-08 1.8888e-08 1.5641e-08 3.2939e-08 2.3353e-10 9.4897e-08 1.1906e-07 0:01:05 403
1598 5.5279e-08 1.8734e-08 1.5313e-08 3.3058e-08 2.2566e-10 9.0536e-08 1.1213e-07 0:00:52 402
1599 5.3740e-08 1.8713e-08 1.5035e-08 3.3100e-08 2.1878e-10 8.9673e-08 1.1346e-07 0:00:42 401
1600 5.2423e-08 1.8791e-08 1.4838e-08 3.3056e-08 2.1515e-10 9.1467e-08 1.1969e-07 0:00:33 400
1601 5.1371e-08 1.8977e-08 1.4720e-08 3.2951e-08 2.1385e-10 9.4673e-08 1.2735e-07 0:00:26 399
1602 5.0533e-08 1.9314e-08 1.4714e-08 3.2839e-08 2.1387e-10 9.8732e-08 1.3564e-07 0:00:21 398
1603 5.0093e-08 1.9764e-08 1.4885e-08 3.2740e-08 2.1569e-10 1.0393e-07 1.4476e-07 0:00:17 397
1604 4.8013e-08 2.0509e-08 1.5191e-08 3.2772e-08 2.1840e-10 1.0781e-07 1.5207e-07 0:00:13 396
1605 5.0904e-08 2.0703e-08 1.5483e-08 3.2662e-08 2.1933e-10 1.1183e-07 1.5926e-07 0:00:11 395
1606 4.8640e-08 2.1558e-08 1.5805e-08 3.2394e-08 2.2187e-10 1.1533e-07 1.6595e-07 0:00:09 394

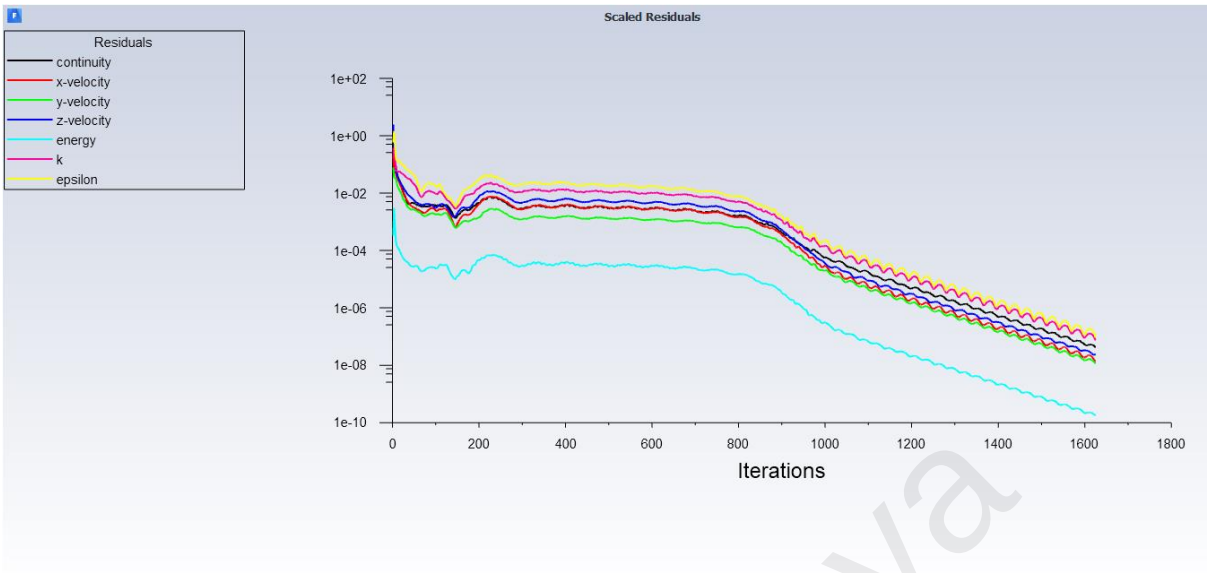
iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1607 5.1811e-08 2.1691e-08 1.6073e-08 3.2187e-08 2.2242e-10 1.1888e-07 1.7246e-07 0:00:07 393
1608 4.9672e-08 2.2388e-08 1.6294e-08 3.1701e-08 2.2488e-10 1.2172e-07 1.7773e-07 0:00:05 392
1609 5.3175e-08 2.2239e-08 1.6469e-08 3.1280e-08 2.2460e-10 1.2395e-07 1.8189e-07 0:00:04 391

1610 5.0647e-08 2.2681e-08 1.6533e-08 3.0515e-08 2.2621e-10 1.2578e-07 1.8473e-07 0:00:03 390
1611 5.4031e-08 2.2291e-08 1.6539e-08 2.9891e-08 2.2483e-10 1.2676e-07 1.8592e-07 0:00:03 389
1612 5.1209e-08 2.2440e-08 1.6400e-08 2.8917e-08 2.2582e-10 1.2747e-07 1.8604e-07 0:01:20 388
1613 5.4110e-08 2.1819e-08 1.6260e-08 2.8181e-08 2.2337e-10 1.2673e-07 1.8473e-07 0:01:04 387
1614 5.1071e-08 2.1684e-08 1.5935e-08 2.7097e-08 2.2346e-10 1.2588e-07 1.8221e-07 0:00:51 386
1615 5.3597e-08 2.0891e-08 1.5666e-08 2.6371e-08 2.2053e-10 1.2356e-07 1.7800e-07 0:00:41 385
1616 5.0622e-08 2.0486e-08 1.5207e-08 2.5322e-08 2.2010e-10 1.2138e-07 1.7312e-07 0:00:32 384
1617 5.2629e-08 1.9549e-08 1.4840e-08 2.4751e-08 2.1499e-10 1.1783e-07 1.6668e-07 0:00:26 383

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1618 5.1425e-08 1.8609e-08 1.4295e-08 2.4147e-08 2.1096e-10 1.1386e-07 1.5947e-07 0:00:21 382
1619 5.0060e-08 1.7703e-08 1.3786e-08 2.3636e-08 2.0689e-10 1.0921e-07 1.5106e-07 0:00:16 381
1620 4.8886e-08 1.6810e-08 1.3303e-08 2.3322e-08 2.0218e-10 1.0380e-07 1.4200e-07 0:00:13 380
1621 4.7713e-08 1.5960e-08 1.2903e-08 2.3268e-08 1.9699e-10 9.7959e-08 1.3232e-07 0:00:10 379
1622 4.6420e-08 1.5185e-08 1.2551e-08 2.3376e-08 1.9180e-10 9.1799e-08 1.2222e-07 0:00:08 378
1623 4.5099e-08 1.4577e-08 1.2197e-08 2.3535e-08 1.8628e-10 8.5406e-08 1.1174e-07 0:00:07 377
1624 4.3919e-08 1.4127e-08 1.1855e-08 2.3677e-08 1.8031e-10 7.9206e-08 1.0150e-07 0:00:05 376
! 1625 solution is converged
1625 4.2687e-08 1.3835e-08 1.1550e-08 2.3829e-08 1.7455e-10 7.3525e-08 9.2515e-08 0:00:04 375
Writing data to D:\2. UM - 2nd Sem\KQE 7001 - Research Project\. ANSYS Case\Case1\Case1-Test_files\dp0\FLU-6\Fluent\SYS.ip ...
x-coord
y-coord
z-coord
pressure
x-velocity
y-velocity
z-velocity
temperature
k
epsilon
Done.

Calculation complete.

ANSYS Residuals – Water (Case 1)



APPENDIX B – CASE 1 ANSYS SETUP, ITERATION, AND RESIDUALS FOR OIL

ANSYS Setup – Oil (Case 1)

3882 hexahedral cells, zone 4, binary.
3882 cell partition ids, zone 4, 7 partitions, binary.
10094 quadrilateral interior faces, zone 1, binary.
1792 quadrilateral wall faces, zone 5, binary.
9 quadrilateral velocity-inlet faces, zone 6, binary.
9 quadrilateral pressure-outlet faces, zone 7, binary.
1294 quadrilateral wall faces, zone 8, binary.
5524 nodes, binary.
5524 node flags, binary.

Building...
mesh
distributing mesh
parts.....,
faces.....,
nodes.....,
cells.....,
bandwidth reduction using Reverse Cuthill-McKee: 93/41 = 2.26829
materials,
interface,
domains,
mixture
zones,
heat
outlet
inlet
wall-fluid
interior-fluid
fluidSetting fluid (mixture) ... Done.
Setting zone id of fluid to 4.
Setting zone id of interior-fluid to 1.
Setting zone id of wall-fluid to 5.
Setting zone id of inlet to 6.
Setting zone id of outlet to 7.
Setting zone id of heat to 8.
Done.
Setting fluid (mixture) ... Done.
Setting inlet (mixture) (zone type changed to mass-flow-inlet) ... Done.
Setting interior-fluid (mixture) ... Done.
Setting wall-fluid (mixture) ... Done.
Setting outlet (mixture) ... Done.
Setting heat (mixture) ... Done.

parallel,
Done.

Preparing mesh for display...
Done.

Setting Post Processing and Surfaces information ... Done.
Information: Converting parameter Pd to report definition.
Information: Converting parameter Tout to report definition.
Information: Converting parameter Tf to report definition.
Information: Converting parameter MFRout to report definition.

ANSYS Iteration – Oil (Case 1)

writing rp variables ... Done.
writing domain variables ... Done.
writing fluid (type fluid) (mixture) ... Done.
writing inlet (type mass-flow-inlet) (mixture) ... Done.
writing interior-fluid (type interior) (mixture) ... Done.
writing wall-fluid (type wall) (mixture) ... Done.
writing outlet (type pressure-outlet) (mixture) ... Done.
writing heat (type wall) (mixture) ... Done.
writing zones map name-id ... Done.

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1 1.0000e+00 3.0749e-07 4.8651e-07 8.1236e-04 2.7947e-05 4.5755e-01 5.3329e-01 0:00:00 1999
2 1.0000e+00 2.1296e-01 7.7272e-02 2.4408e+00 9.3809e-05 2.6333e-01 1.3335e+00 0:33:18 1998
3 3.2764e-01 5.0186e-02 1.6769e-02 2.4894e-01 2.9017e-03 6.0443e-01 1.6280e+01 0:26:38 1997
4 1.9395e-01 5.5615e-02 3.2260e-02 3.0351e-01 2.4331e-03 5.5995e-01 1.8985e+00 0:21:17 1996
5 1.2888e-01 5.2785e-02 4.2864e-02 2.5232e-01 1.1452e-03 2.2075e-01 4.5358e-01 0:17:01 1995

turbulent viscosity limited to viscosity ratio of 1.000000e+05 in 1 cells
6 1.2651e-01 5.4748e-02 3.3027e-02 1.6943e-01 5.3378e-04 1.5537e-01 2.7351e-01 0:13:37 1994
7 1.1209e-01 5.3412e-02 3.5526e-02 1.0635e-01 2.7659e-04 1.5384e-01 2.2622e-01 0:10:53 1993
8 8.9277e-02 4.8410e-02 3.1401e-02 7.0105e-02 1.6769e-04 8.6993e-02 1.7817e-01 0:08:42 1992
9 6.8599e-02 4.1097e-02 2.4235e-02 5.4896e-02 1.1195e-04 6.3580e-02 1.3710e-01 0:06:58 1991

10 5.2317e-02 3.4961e-02 2.0438e-02 4.6135e-02 8.3204e-05 5.5979e-02 1.2064e-01 0:05:34 1990
11 4.2701e-02 3.0721e-02 1.8275e-02 4.1154e-02 6.4749e-05 5.8633e-02 1.2664e-01 0:04:27 1989

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
12 3.5353e-02 2.8941e-02 1.6115e-02 3.6568e-02 5.3167e-05 6.3389e-02 1.3152e-01 0:03:33 1988
13 3.2205e-02 2.7971e-02 1.4726e-02 3.2951e-02 4.7404e-05 6.4325e-02 1.2776e-01 0:02:51 1987
14 2.8994e-02 2.6115e-02 1.3391e-02 2.9650e-02 4.4053e-05 6.3654e-02 1.2378e-01 0:02:16 1986
15 2.7252e-02 2.4176e-02 1.2346e-02 2.6944e-02 3.8501e-05 6.1291e-02 1.2246e-01 0:01:49 1985
16 2.5402e-02 2.2258e-02 1.1492e-02 2.5166e-02 3.4406e-05 5.8437e-02 1.2533e-01 0:01:27 1984
17 2.3797e-02 2.0810e-02 1.0949e-02 2.3569e-02 3.1509e-05 5.5000e-02 1.1953e-01 0:01:10 1983
18 2.1636e-02 1.9296e-02 1.0693e-02 2.2466e-02 2.7501e-05 5.2572e-02 1.1414e-01 0:00:56 1982
19 1.9811e-02 1.7479e-02 1.0132e-02 2.0833e-02 2.3880e-05 4.9869e-02 1.0814e-01 0:00:45 1981
20 1.7851e-02 1.5843e-02 9.2882e-03 1.9227e-02 2.1861e-05 4.7024e-02 1.0013e-01 0:00:36 1980
21 1.5980e-02 1.4305e-02 8.3715e-03 1.8162e-02 2.0618e-05 4.4960e-02 9.4566e-02 0:00:29 1979
22 1.4431e-02 1.2755e-02 7.5506e-03 1.7621e-02 1.9592e-05 4.3306e-02 9.1680e-02 0:00:23 1978

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
23 1.2561e-02 1.1351e-02 6.7514e-03 1.7019e-02 1.8777e-05 4.3391e-02 9.5428e-02 0:00:18 1977
24 1.0571e-02 1.0150e-02 6.0321e-03 1.6092e-02 1.7760e-05 4.4343e-02 9.8974e-02 0:00:15 1976
25 9.3944e-03 9.2557e-03 5.5768e-03 1.5087e-02 1.6751e-05 4.4334e-02 9.7427e-02 0:00:12 1975
26 9.0732e-03 8.6999e-03 5.3349e-03 1.4168e-02 1.5750e-05 4.3023e-02 9.2048e-02 0:06:44 1974
27 8.7961e-03 8.1917e-03 5.0870e-03 1.3374e-02 1.4783e-05 4.0843e-02 8.4991e-02 0:05:23 1973
28 8.1650e-03 7.4981e-03 4.8531e-03 1.2663e-02 1.3940e-05 3.9420e-02 8.1291e-02 0:04:18 1972

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
29 7.5937e-03 6.8241e-03 4.4841e-03 1.1995e-02 1.4990e-05 3.7864e-02 7.6932e-02 0:03:27 1971

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
30 7.1050e-03 6.3407e-03 4.2160e-03 1.1346e-02 1.4676e-05 3.6200e-02 7.3033e-02 0:02:45 1970

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.

31 6.4840e-03 6.0148e-03 3.9160e-03 1.0768e-02 1.4642e-05 3.4646e-02 7.0196e-02 0:02:12 1969

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
32 5.8793e-03 5.6788e-03 3.7089e-03 1.0242e-02 1.4127e-05 3.3228e-02 6.7878e-02 0:01:46 1968

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
33 5.4678e-03 5.4319e-03 3.5346e-03 9.6498e-03 1.4059e-05 3.2041e-02 6.6044e-02 0:01:24 1967

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
34 5.0276e-03 5.1826e-03 3.3825e-03 9.1967e-03 1.3534e-05 3.0936e-02 6.4219e-02 0:01:08 1966

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
35 4.5790e-03 4.9633e-03 3.1598e-03 8.7812e-03 1.3721e-05 2.9978e-02 6.2668e-02 0:00:54 1965

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
36 4.2506e-03 4.7226e-03 3.0258e-03 8.4337e-03 1.3001e-05 2.9113e-02 6.0933e-02 0:00:43 1964
37 4.0811e-03 4.4734e-03 2.8889e-03 8.1616e-03 1.1470e-05 2.8300e-02 5.9000e-02 0:00:35 1963
38 3.8971e-03 4.3273e-03 2.7933e-03 7.9796e-03 1.0209e-05 2.7488e-02 5.6780e-02 0:00:28 1962
39 3.7828e-03 4.1476e-03 2.7019e-03 7.7309e-03 9.7028e-06 2.6603e-02 5.4415e-02 0:00:22 1961
40 3.7554e-03 3.9908e-03 2.6079e-03 7.5014e-03 9.3268e-06 2.5650e-02 5.1895e-02 0:00:18 1960
41 3.7540e-03 3.8433e-03 2.5276e-03 7.2356e-03 8.8864e-06 2.4652e-02 4.9205e-02 0:00:14 1959
42 3.8249e-03 3.7234e-03 2.4700e-03 6.9645e-03 8.6378e-06 2.3537e-02 4.6721e-02 0:00:11 1958
43 3.8922e-03 3.6141e-03 2.4181e-03 6.7395e-03 8.6216e-06 2.2566e-02 4.4840e-02 0:00:09 1957
44 3.9279e-03 3.4959e-03 2.3838e-03 6.5296e-03 8.6551e-06 2.1601e-02 4.3245e-02 0:00:07 1956

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
45 4.0085e-03 3.3888e-03 2.3969e-03 6.3126e-03 8.5755e-06 2.0882e-02 4.2178e-02 0:00:06 1955
46 4.1107e-03 3.2856e-03 2.4543e-03 6.1355e-03 8.5334e-06 2.0529e-02 4.1881e-02 0:00:05 1954
47 4.1890e-03 3.2107e-03 2.5013e-03 5.9298e-03 8.4902e-06 2.0174e-02 4.1411e-02 0:00:04 1953
48 4.4506e-03 3.1064e-03 2.5482e-03 5.7566e-03 8.5951e-06 1.9480e-02 3.9901e-02 0:00:03 1952
49 4.2299e-03 3.1259e-03 2.6157e-03 5.5093e-03 8.4984e-06 1.8521e-02 3.7917e-02 0:00:02 1951

50 4.3538e-03 3.0804e-03 2.6413e-03 5.2800e-03 8.2765e-06 1.7371e-02 3.5633e-02 0:00:02 1950
51 4.0562e-03 3.0858e-03 2.6551e-03 5.0359e-03 8.1446e-06 1.6222e-02 3.3112e-02 0:06:31 1949
52 4.2476e-03 3.0100e-03 2.6211e-03 4.8413e-03 8.0525e-06 1.5065e-02 3.0613e-02 0:05:13 1948
53 3.8982e-03 2.9350e-03 2.5576e-03 4.6917e-03 8.1631e-06 1.4011e-02 2.8011e-02 0:04:10 1947
54 3.7273e-03 2.8338e-03 2.4630e-03 4.5637e-03 8.2240e-06 1.3010e-02 2.5496e-02 0:03:20 1946
55 3.8507e-03 2.6914e-03 2.3305e-03 4.4435e-03 8.0399e-06 1.2098e-02 2.3140e-02 0:02:40 1945

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
56 3.5981e-03 2.5553e-03 2.2020e-03 4.3678e-03 7.7698e-06 1.1397e-02 2.1277e-02 0:02:08 1944
57 3.7949e-03 2.4375e-03 2.1111e-03 4.2898e-03 7.5335e-06 1.0703e-02 1.9857e-02 0:01:42 1943
58 3.5611e-03 2.3525e-03 2.0586e-03 4.2275e-03 7.2940e-06 1.0027e-02 1.8193e-02 0:01:22 1942
59 3.6989e-03 2.2861e-03 2.0172e-03 4.1133e-03 7.2442e-06 9.4129e-03 1.6799e-02 0:01:05 1941
60 3.4482e-03 2.2794e-03 2.0012e-03 4.0069e-03 7.2464e-06 8.9764e-03 1.6090e-02 0:00:52 1940
61 3.4534e-03 2.2689e-03 1.9997e-03 3.9115e-03 7.3349e-06 8.7450e-03 1.5936e-02 0:00:42 1939
62 3.4483e-03 2.2559e-03 2.0001e-03 3.8185e-03 7.3490e-06 8.7003e-03 1.6248e-02 0:00:33 1938
63 3.4021e-03 2.2420e-03 1.9858e-03 3.7441e-03 7.4202e-06 8.8177e-03 1.6839e-02 0:00:27 1937
64 3.3577e-03 2.2219e-03 1.9699e-03 3.6936e-03 7.5194e-06 9.0145e-03 1.7482e-02 0:00:21 1936
65 3.3405e-03 2.1955e-03 1.9305e-03 3.6417e-03 7.6650e-06 9.1733e-03 1.7765e-02 0:00:17 1935

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
66 3.4246e-03 2.1555e-03 1.8811e-03 3.5673e-03 8.1801e-06 9.2825e-03 1.7835e-02 0:00:14 1934

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
67 3.1743e-03 2.1288e-03 1.8434e-03 3.4605e-03 7.5326e-06 9.4584e-03 1.7961e-02 0:00:11 1933

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
68 3.2249e-03 2.0533e-03 1.7911e-03 3.3759e-03 7.1280e-06 9.7280e-03 1.8139e-02 0:00:09 1932

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
69 2.9759e-03 2.0029e-03 1.7441e-03 3.2950e-03 6.8755e-06 1.0064e-02 1.8725e-02 0:00:07 1931

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
70 2.9198e-03 1.9360e-03 1.6953e-03 3.2315e-03 6.7157e-06 1.0370e-02 1.9384e-02 0:00:06 1930

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
71 2.9323e-03 1.8980e-03 1.6489e-03 3.1873e-03 6.7103e-06 1.0602e-02 1.9954e-02 0:00:04 1929

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
72 2.9649e-03 1.8891e-03 1.6033e-03 3.1604e-03 6.6374e-06 1.0766e-02 2.0436e-02 0:00:04 1928

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
73 2.9692e-03 1.9011e-03 1.5639e-03 3.1163e-03 6.4472e-06 1.0798e-02 2.0643e-02 0:00:03 1927

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
74 2.9874e-03 1.9305e-03 1.5238e-03 3.0632e-03 6.4943e-06 1.0709e-02 2.0398e-02 0:00:02 1926

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
75 2.9576e-03 1.9594e-03 1.4960e-03 3.0344e-03 6.4229e-06 1.0428e-02 1.9598e-02 0:06:27 1925

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
76 2.9923e-03 1.9854e-03 1.4746e-03 3.0233e-03 6.3139e-06 9.9350e-03 1.8354e-02 0:05:09 1924

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
77 2.9708e-03 1.9724e-03 1.4365e-03 3.0209e-03 6.1901e-06 9.3409e-03 1.6944e-02 0:04:07 1923

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
78 2.9118e-03 1.9549e-03 1.4065e-03 3.0046e-03 6.0264e-06 8.7186e-03 1.5715e-02 0:03:18 1922

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
79 2.8437e-03 1.9195e-03 1.3704e-03 2.9910e-03 5.9123e-06 8.1751e-03 1.5023e-02 0:02:38 1921

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
80 2.7690e-03 1.8798e-03 1.3170e-03 2.9697e-03 5.7601e-06 7.8077e-03 1.4613e-02 0:02:06 1920

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.
81 2.7068e-03 1.8325e-03 1.2628e-03 2.9414e-03 5.6421e-06 7.5649e-03 1.4301e-02 0:01:41 1919

Reversed flow on 1 face (11.6% area) of pressure-outlet 7.

82 2.6516e-03 1.7843e-03 1.2106e-03 2.9032e-03 5.4186e-06 7.2732e-03 1.3677e-02 0:01:21 1918
83 2.5922e-03 1.7432e-03 1.1549e-03 2.8631e-03 5.0686e-06 7.0679e-03 1.3200e-02 0:01:05 1917
84 2.5723e-03 1.7061e-03 1.1033e-03 2.8326e-03 4.7842e-06 6.9187e-03 1.2829e-02 0:00:52 1916
85 2.5688e-03 1.6699e-03 1.0512e-03 2.7792e-03 4.6367e-06 6.8106e-03 1.2663e-02 0:00:41 1915
86 2.5491e-03 1.6376e-03 1.0128e-03 2.7279e-03 4.5970e-06 6.7340e-03 1.2667e-02 0:00:33 1914
87 2.5480e-03 1.6087e-03 9.8716e-04 2.6807e-03 4.5698e-06 6.7069e-03 1.2780e-02 0:00:26 1913
88 2.5301e-03 1.5975e-03 9.7937e-04 2.6253e-03 4.5484e-06 6.7199e-03 1.2957e-02 0:00:21 1912

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
89 2.5207e-03 1.5964e-03 9.7702e-04 2.5775e-03 4.4450e-06 6.7781e-03 1.3217e-02 0:00:17 1911
90 2.5163e-03 1.6123e-03 9.8851e-04 2.5320e-03 4.3884e-06 6.8539e-03 1.3378e-02 0:00:14 1910
91 2.5100e-03 1.6374e-03 1.0054e-03 2.4828e-03 4.3534e-06 6.9523e-03 1.3619e-02 0:00:11 1909
92 2.5064e-03 1.6690e-03 1.0252e-03 2.4290e-03 4.3744e-06 6.9299e-03 1.3528e-02 0:00:09 1908
93 2.4741e-03 1.7065e-03 1.0444e-03 2.3808e-03 4.4631e-06 6.9143e-03 1.3297e-02 0:00:07 1907
94 2.5323e-03 1.7251e-03 1.0579e-03 2.3262e-03 4.5558e-06 6.7632e-03 1.2707e-02 0:00:06 1906
95 2.3566e-03 1.7598e-03 1.0631e-03 2.2828e-03 4.7259e-06 6.6091e-03 1.2122e-02 0:00:04 1905
96 2.4558e-03 1.7531e-03 1.0663e-03 2.2500e-03 4.8169e-06 6.3642e-03 1.1386e-02 0:00:04 1904
97 2.3506e-03 1.7641e-03 1.0742e-03 2.2182e-03 4.9008e-06 6.1735e-03 1.0925e-02 0:00:03 1903
98 2.4703e-03 1.7280e-03 1.0812e-03 2.2069e-03 4.9096e-06 6.0603e-03 1.0829e-02 0:00:02 1902
99 2.3733e-03 1.7173e-03 1.1043e-03 2.1988e-03 4.9629e-06 6.0693e-03 1.0871e-02 0:06:22 1901

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
100 2.4970e-03 1.6676e-03 1.1208e-03 2.2169e-03 4.9058e-06 6.0487e-03 1.0799e-02 0:05:05 1900
101 2.5229e-03 1.6261e-03 1.1438e-03 2.2508e-03 4.9947e-06 6.0103e-03 1.0600e-02 0:04:04 1899
102 2.5235e-03 1.6010e-03 1.1631e-03 2.2996e-03 5.1146e-06 5.9652e-03 1.0498e-02 0:03:15 1898
103 2.5642e-03 1.5834e-03 1.1844e-03 2.3722e-03 5.2272e-06 5.9924e-03 1.0542e-02 0:02:36 1897
104 2.5181e-03 1.6106e-03 1.2025e-03 2.4480e-03 5.3795e-06 6.0524e-03 1.0651e-02 0:02:05 1896
105 2.6030e-03 1.6339e-03 1.2071e-03 2.5260e-03 5.4008e-06 6.1080e-03 1.0729e-02 0:01:40 1895

106 2.6303e-03 1.6788e-03 1.2149e-03 2.5930e-03 5.5275e-06 6.1809e-03 1.0831e-02 0:01:20 1894
107 2.6486e-03 1.7293e-03 1.2137e-03 2.6374e-03 5.7629e-06 6.2767e-03 1.0950e-02 0:01:04 1893
108 2.6466e-03 1.7732e-03 1.2024e-03 2.6574e-03 5.9927e-06 6.3593e-03 1.1014e-02 0:00:51 1892
109 2.5940e-03 1.8081e-03 1.1834e-03 2.6571e-03 6.1624e-06 6.4049e-03 1.1046e-02 0:00:41 1891
110 2.5219e-03 1.8277e-03 1.1652e-03 2.6476e-03 6.3694e-06 6.3911e-03 1.0983e-02 0:00:33 1890

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
111 2.4066e-03 1.8539e-03 1.1560e-03 2.6288e-03 6.5314e-06 6.3450e-03 1.0803e-02 0:00:26 1889
112 2.3612e-03 1.8878e-03 1.1562e-03 2.6043e-03 6.6046e-06 6.3195e-03 1.0555e-02 0:00:21 1888
113 2.3602e-03 1.9065e-03 1.1708e-03 2.5979e-03 6.6890e-06 6.2794e-03 1.0159e-02 0:00:17 1887
114 2.4241e-03 1.9224e-03 1.2147e-03 2.5956e-03 6.7189e-06 6.2499e-03 9.7446e-03 0:00:13 1886
115 2.4874e-03 1.9389e-03 1.2741e-03 2.5967e-03 6.6745e-06 6.2700e-03 9.4051e-03 0:00:11 1885
116 2.5917e-03 1.9758e-03 1.3416e-03 2.5913e-03 6.6254e-06 6.3429e-03 9.3792e-03 0:00:09 1884
117 2.7020e-03 2.0162e-03 1.4083e-03 2.5783e-03 6.7310e-06 6.4143e-03 9.5283e-03 0:00:07 1883
118 2.7977e-03 2.0646e-03 1.4542e-03 2.5621e-03 6.8641e-06 6.4556e-03 9.6181e-03 0:00:05 1882
119 2.7908e-03 2.0997e-03 1.4866e-03 2.5329e-03 6.9830e-06 6.3924e-03 9.4397e-03 0:00:04 1881
120 2.7721e-03 2.0839e-03 1.5012e-03 2.4986e-03 7.0615e-06 6.2829e-03 9.2301e-03 0:00:03 1880
121 2.8044e-03 2.0315e-03 1.4872e-03 2.4448e-03 7.0147e-06 6.1526e-03 8.8192e-03 0:00:03 1879

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
122 2.8536e-03 1.9698e-03 1.4537e-03 2.3976e-03 6.9138e-06 5.9633e-03 8.1520e-03 0:00:02 1878
123 2.8463e-03 1.9043e-03 1.3874e-03 2.3620e-03 6.7277e-06 5.7552e-03 7.8600e-03 0:00:02 1877
124 2.8364e-03 1.8329e-03 1.3322e-03 2.3204e-03 6.5418e-06 5.6833e-03 8.0499e-03 0:00:01 1876
125 2.7898e-03 1.7598e-03 1.2801e-03 2.2835e-03 6.2755e-06 5.5467e-03 7.9304e-03 0:00:01 1875
126 2.7475e-03 1.7168e-03 1.2241e-03 2.2471e-03 5.9600e-06 5.3969e-03 7.6490e-03 0:06:16 1874
127 2.7329e-03 1.6840e-03 1.1807e-03 2.2043e-03 5.6579e-06 5.1586e-03 7.3230e-03 0:05:00 1873
128 2.6595e-03 1.6560e-03 1.1312e-03 2.1516e-03 5.3898e-06 4.9226e-03 7.0483e-03 0:04:00 1872
129 2.5695e-03 1.6053e-03 1.0788e-03 2.0958e-03 5.1013e-06 4.6731e-03 6.7609e-03 0:03:12 1871

130 2.4899e-03 1.5355e-03 1.0254e-03 2.0188e-03 4.7396e-06 4.4077e-03 6.3560e-03 0:02:34 1870
131 2.4050e-03 1.4387e-03 9.7181e-04 1.9432e-03 4.3638e-06 4.1092e-03 5.8075e-03 0:02:03 1869
132 2.3115e-03 1.3278e-03 9.1205e-04 1.8737e-03 4.0518e-06 3.7924e-03 5.2079e-03 0:01:38 1868

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
133 2.2095e-03 1.2148e-03 8.5371e-04 1.8099e-03 3.8179e-06 3.5284e-03 4.9360e-03 0:01:18 1867
134 2.2184e-03 1.1160e-03 8.0408e-04 1.7400e-03 3.5317e-06 3.2496e-03 4.6081e-03 0:01:03 1866
135 1.9833e-03 1.0409e-03 7.5355e-04 1.6500e-03 3.3569e-06 3.0056e-03 4.2799e-03 0:00:50 1865
136 1.8797e-03 9.7939e-04 7.0868e-04 1.5623e-03 3.2307e-06 2.8041e-03 3.9314e-03 0:00:40 1864
137 1.8647e-03 9.1576e-04 6.6004e-04 1.4719e-03 3.1229e-06 2.6986e-03 3.7227e-03 0:00:32 1863
138 1.6033e-03 8.5332e-04 6.0035e-04 1.4080e-03 3.0874e-06 2.6606e-03 3.6984e-03 0:00:26 1862
139 1.5719e-03 7.9783e-04 5.5587e-04 1.3621e-03 3.0874e-06 2.6589e-03 3.6742e-03 0:00:21 1861
140 1.4065e-03 7.4910e-04 5.1908e-04 1.3417e-03 3.0181e-06 2.6995e-03 3.7357e-03 0:00:16 1860
141 1.4292e-03 7.0516e-04 4.9745e-04 1.3370e-03 2.9693e-06 2.7434e-03 3.8063e-03 0:00:13 1859
142 1.3044e-03 6.6347e-04 4.9210e-04 1.3674e-03 3.0018e-06 2.7635e-03 3.8254e-03 0:00:10 1858
143 1.3500e-03 6.3384e-04 4.9643e-04 1.4113e-03 3.2330e-06 2.7788e-03 3.8319e-03 0:00:08 1857

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
144 1.3584e-03 6.1821e-04 5.1095e-04 1.4782e-03 3.6404e-06 2.8104e-03 3.8625e-03 0:00:07 1856
145 1.3607e-03 6.2366e-04 5.4482e-04 1.5776e-03 4.0768e-06 2.8791e-03 4.0012e-03 0:00:05 1855
146 1.4271e-03 6.3569e-04 5.7046e-04 1.6872e-03 4.4713e-06 3.0081e-03 4.3163e-03 0:00:04 1854
147 1.4542e-03 6.6625e-04 6.0337e-04 1.7998e-03 4.7744e-06 3.1880e-03 4.7449e-03 0:00:03 1853
148 1.4629e-03 7.1533e-04 6.3591e-04 1.9298e-03 4.8916e-06 3.3555e-03 5.1664e-03 0:00:03 1852
149 1.4863e-03 7.7604e-04 6.6738e-04 2.0749e-03 4.6871e-06 3.4937e-03 5.4620e-03 0:00:02 1851
150 1.5376e-03 8.4517e-04 7.0440e-04 2.2074e-03 4.5311e-06 3.6093e-03 5.7017e-03 0:06:12 1850
151 1.6358e-03 9.2543e-04 7.4578e-04 2.3370e-03 4.4177e-06 3.7141e-03 5.8693e-03 0:04:57 1849
152 1.7231e-03 1.0102e-03 7.8469e-04 2.4593e-03 4.4597e-06 3.8060e-03 6.0126e-03 0:03:58 1848
153 1.8402e-03 1.1010e-03 8.2118e-04 2.5723e-03 4.5863e-06 3.8976e-03 6.2870e-03 0:03:10 1847

154 1.9914e-03 1.1862e-03 8.5326e-04 2.6626e-03 4.7737e-06 4.0281e-03 6.8807e-03 0:02:32 1846

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
155 2.1232e-03 1.2683e-03 8.8061e-04 2.7541e-03 4.9237e-06 4.1713e-03 7.5763e-03 0:02:01 1845
156 2.2520e-03 1.3389e-03 9.0050e-04 2.8328e-03 5.1760e-06 4.3052e-03 8.0285e-03 0:01:37 1844
157 2.3557e-03 1.4161e-03 9.2044e-04 2.9170e-03 5.4629e-06 4.4421e-03 8.3031e-03 0:01:18 1843
158 2.4413e-03 1.4695e-03 9.3025e-04 2.9948e-03 5.6848e-06 4.5951e-03 8.5241e-03 0:01:02 1842
159 2.5103e-03 1.5222e-03 9.2950e-04 3.0607e-03 5.9764e-06 4.8347e-03 8.8094e-03 0:00:50 1841
160 2.5035e-03 1.5751e-03 9.3715e-04 3.1002e-03 6.2297e-06 5.1249e-03 9.2628e-03 0:00:40 1840
161 2.5755e-03 1.6116e-03 9.5152e-04 3.1234e-03 6.3036e-06 5.4763e-03 9.9152e-03 0:00:32 1839
162 2.6189e-03 1.6485e-03 9.7724e-04 3.1029e-03 6.3506e-06 5.9062e-03 1.0632e-02 0:00:25 1838
163 2.6593e-03 1.6872e-03 9.9669e-04 3.0605e-03 6.2757e-06 6.3099e-03 1.1291e-02 0:00:20 1837
164 2.6880e-03 1.7144e-03 1.0044e-03 3.0285e-03 6.2661e-06 6.7119e-03 1.1861e-02 0:00:16 1836
165 2.7022e-03 1.7404e-03 1.0125e-03 2.9646e-03 6.2803e-06 7.0266e-03 1.2234e-02 0:00:13 1835

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
166 2.7175e-03 1.7470e-03 1.0107e-03 2.9322e-03 6.2478e-06 7.2654e-03 1.2523e-02 0:00:10 1834
167 2.7337e-03 1.7417e-03 1.0045e-03 2.9348e-03 6.1400e-06 7.4084e-03 1.2703e-02 0:00:08 1833
168 2.6570e-03 1.7179e-03 9.9526e-04 2.9615e-03 5.9617e-06 7.4684e-03 1.2910e-02 0:00:07 1832
169 2.6256e-03 1.6930e-03 9.8836e-04 2.9957e-03 5.7135e-06 7.5324e-03 1.3232e-02 0:00:05 1831
170 2.5735e-03 1.6708e-03 9.7987e-04 3.0293e-03 5.5057e-06 7.6158e-03 1.3672e-02 0:00:04 1830
171 2.5395e-03 1.6625e-03 9.7600e-04 3.0590e-03 5.3609e-06 7.7279e-03 1.4189e-02 0:00:03 1829
172 2.6064e-03 1.6652e-03 9.8212e-04 3.0890e-03 5.3882e-06 7.8400e-03 1.4711e-02 0:00:03 1828
173 2.6179e-03 1.6770e-03 9.9807e-04 3.1284e-03 5.4643e-06 7.9624e-03 1.5192e-02 0:00:02 1827
174 2.5982e-03 1.7035e-03 1.0189e-03 3.1720e-03 5.6247e-06 8.1023e-03 1.5681e-02 0:06:07 1826
175 2.6129e-03 1.7545e-03 1.0406e-03 3.2502e-03 5.8438e-06 8.2696e-03 1.6149e-02 0:04:53 1825
176 2.6615e-03 1.8167e-03 1.0493e-03 3.3562e-03 6.0910e-06 8.5149e-03 1.6684e-02 0:03:55 1824

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

177 2.7147e-03 1.8959e-03 1.0537e-03 3.4780e-03 6.4717e-06 8.8759e-03 1.7321e-02 0:03:08 1823
178 2.8818e-03 1.9664e-03 1.0566e-03 3.6314e-03 6.9648e-06 9.3543e-03 1.8050e-02 0:02:30 1822
179 3.0787e-03 2.0550e-03 1.0589e-03 3.8289e-03 7.4524e-06 9.8872e-03 1.9234e-02 0:02:00 1821
180 3.2194e-03 2.1499e-03 1.0682e-03 4.0625e-03 8.0428e-06 1.0385e-02 2.0732e-02 0:01:36 1820
181 3.3517e-03 2.2707e-03 1.0986e-03 4.3183e-03 8.6742e-06 1.0781e-02 2.2149e-02 0:01:17 1819
182 3.4938e-03 2.4359e-03 1.1567e-03 4.5834e-03 9.2403e-06 1.1165e-02 2.3457e-02 0:01:01 1818
183 3.5825e-03 2.6067e-03 1.2238e-03 4.8604e-03 9.6465e-06 1.1396e-02 2.3962e-02 0:00:49 1817
184 3.7288e-03 2.7726e-03 1.2683e-03 5.1635e-03 9.7207e-06 1.1382e-02 2.3366e-02 0:00:39 1816
185 3.8033e-03 2.9175e-03 1.3031e-03 5.4448e-03 9.7808e-06 1.1230e-02 2.1994e-02 0:00:31 1815
186 3.7442e-03 3.0373e-03 1.3112e-03 5.6921e-03 1.0197e-05 1.1555e-02 2.2710e-02 0:00:25 1814
187 3.8510e-03 3.1465e-03 1.3020e-03 5.8773e-03 1.0817e-05 1.2208e-02 2.4824e-02 0:00:20 1813

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
188 3.9977e-03 3.2954e-03 1.2812e-03 6.0493e-03 1.1596e-05 1.2758e-02 2.6077e-02 0:00:16 1812
189 4.1830e-03 3.5021e-03 1.3089e-03 6.2649e-03 1.2661e-05 1.3295e-02 2.7406e-02 0:00:13 1811
190 4.3651e-03 3.7147e-03 1.3670e-03 6.5181e-03 1.3716e-05 1.3714e-02 2.8293e-02 0:00:10 1810
191 4.5783e-03 3.8829e-03 1.4228e-03 6.7994e-03 1.4669e-05 1.3963e-02 2.8377e-02 0:00:08 1809
192 4.7736e-03 4.0565e-03 1.4476e-03 7.0615e-03 1.5494e-05 1.4388e-02 2.8525e-02 0:00:07 1808
193 4.8383e-03 4.2316e-03 1.4526e-03 7.3589e-03 1.6155e-05 1.4910e-02 2.8928e-02 0:00:05 1807
194 4.8696e-03 4.3610e-03 1.4760e-03 7.6465e-03 1.5851e-05 1.5096e-02 2.9350e-02 0:00:04 1806
195 4.9316e-03 4.4362e-03 1.5074e-03 7.9377e-03 1.5987e-05 1.5304e-02 3.1705e-02 0:00:03 1805
196 4.9472e-03 4.5715e-03 1.5483e-03 8.2646e-03 1.5625e-05 1.5691e-02 3.5068e-02 0:00:03 1804
197 4.8206e-03 4.7179e-03 1.5897e-03 8.6728e-03 1.5365e-05 1.6027e-02 3.7214e-02 0:00:02 1803
198 4.8046e-03 4.8408e-03 1.6031e-03 8.9751e-03 1.5257e-05 1.6118e-02 3.5287e-02 0:00:02 1802

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
199 4.9221e-03 5.0109e-03 1.6169e-03 9.2562e-03 1.5913e-05 1.6401e-02 3.4300e-02 0:06:02 1801
200 5.1136e-03 5.2317e-03 1.6620e-03 9.4428e-03 1.6960e-05 1.7286e-02 3.7060e-02 0:04:49 1800

201 5.5885e-03 5.4446e-03 1.7282e-03 9.5711e-03 1.7802e-05 1.7941e-02 3.7124e-02 0:03:51 1799
202 5.7048e-03 5.6930e-03 1.8355e-03 9.6410e-03 1.8178e-05 1.8149e-02 3.6829e-02 0:03:05 1798
203 6.1042e-03 5.8293e-03 1.9265e-03 9.6346e-03 1.8191e-05 1.8412e-02 3.7090e-02 0:02:28 1797
204 6.2308e-03 5.9869e-03 2.0433e-03 9.6851e-03 1.8143e-05 1.8625e-02 3.6883e-02 0:01:58 1796
205 6.5308e-03 6.0992e-03 2.1376e-03 9.8503e-03 1.7865e-05 1.8722e-02 3.6250e-02 0:01:34 1795
206 6.6275e-03 6.1853e-03 2.1957e-03 1.0091e-02 1.7588e-05 1.8997e-02 3.6517e-02 0:01:16 1794
207 6.4417e-03 6.2967e-03 2.2444e-03 1.0425e-02 1.7579e-05 1.9419e-02 3.7951e-02 0:01:00 1793
208 6.6430e-03 6.3728e-03 2.2612e-03 1.0649e-02 1.7548e-05 1.9855e-02 4.0661e-02 0:00:48 1792
209 6.4858e-03 6.5496e-03 2.3054e-03 1.0873e-02 1.7839e-05 2.0131e-02 4.3681e-02 0:00:39 1791

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
210 6.4294e-03 6.7430e-03 2.3608e-03 1.1041e-02 1.8158e-05 1.9803e-02 4.3951e-02 0:00:31 1790
211 6.5261e-03 6.8748e-03 2.3888e-03 1.1149e-02 1.9173e-05 1.9398e-02 4.1539e-02 0:00:25 1789
212 6.2608e-03 7.0348e-03 2.4351e-03 1.1359e-02 2.0025e-05 1.9571e-02 4.0641e-02 0:00:20 1788
213 6.3205e-03 7.0621e-03 2.4009e-03 1.1458e-02 2.0787e-05 2.0147e-02 4.2360e-02 0:00:16 1787
214 6.1804e-03 7.1485e-03 2.4044e-03 1.1583e-02 2.0862e-05 2.0630e-02 4.1267e-02 0:00:13 1786
215 6.6417e-03 7.1248e-03 2.3944e-03 1.1648e-02 2.0639e-05 2.0838e-02 4.0862e-02 0:00:10 1785
216 6.9391e-03 7.1765e-03 2.4239e-03 1.1681e-02 2.0536e-05 2.0986e-02 4.0681e-02 0:00:08 1784
217 7.1883e-03 7.2648e-03 2.4836e-03 1.1582e-02 2.0644e-05 2.0868e-02 3.9529e-02 0:00:06 1783
218 7.2619e-03 7.3663e-03 2.5801e-03 1.1370e-02 2.0886e-05 2.0273e-02 3.7447e-02 0:00:05 1782
219 7.3010e-03 7.4258e-03 2.6655e-03 1.1132e-02 2.0904e-05 1.9665e-02 3.6271e-02 0:00:04 1781
220 7.3387e-03 7.4943e-03 2.7408e-03 1.0954e-02 2.0830e-05 1.9581e-02 3.6587e-02 0:00:03 1780

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
221 7.3761e-03 7.5669e-03 2.7782e-03 1.0906e-02 2.0441e-05 2.0146e-02 3.8820e-02 0:00:03 1779
222 7.4973e-03 7.4723e-03 2.7203e-03 1.0902e-02 2.0334e-05 2.1057e-02 4.2230e-02 0:05:58 1778
223 7.3006e-03 7.3728e-03 2.6749e-03 1.0926e-02 2.0404e-05 2.1663e-02 4.3685e-02 0:04:46 1777
224 6.9399e-03 7.3312e-03 2.6501e-03 1.1043e-02 2.0499e-05 2.1403e-02 4.1363e-02 0:03:49 1776

225 6.9083e-03 7.2427e-03 2.6679e-03 1.1070e-02 2.0424e-05 2.0734e-02 3.9673e-02 0:03:03 1775
226 6.5893e-03 7.2443e-03 2.7263e-03 1.1100e-02 2.0544e-05 1.9709e-02 3.8588e-02 0:02:26 1774
227 6.2620e-03 7.2883e-03 2.7520e-03 1.1149e-02 2.0318e-05 1.8542e-02 3.5779e-02 0:01:57 1773
228 6.3719e-03 7.2042e-03 2.7179e-03 1.1105e-02 2.0385e-05 1.7973e-02 3.4020e-02 0:01:33 1772
229 6.4638e-03 7.0507e-03 2.6172e-03 1.1076e-02 2.0455e-05 1.7857e-02 3.3511e-02 0:01:15 1771
230 6.5414e-03 6.9426e-03 2.4976e-03 1.1013e-02 2.0289e-05 1.7963e-02 3.3249e-02 0:01:00 1770
231 6.6670e-03 6.8724e-03 2.4112e-03 1.0953e-02 2.0093e-05 1.8330e-02 3.3390e-02 0:00:48 1769

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
232 6.8021e-03 6.8274e-03 2.4187e-03 1.0826e-02 1.9962e-05 1.8616e-02 3.3545e-02 0:00:38 1768
233 6.7762e-03 6.8513e-03 2.4782e-03 1.0625e-02 1.9818e-05 1.8519e-02 3.4086e-02 0:00:31 1767
234 6.8493e-03 6.8899e-03 2.5327e-03 1.0334e-02 1.9886e-05 1.8300e-02 3.5153e-02 0:00:24 1766
235 6.7763e-03 6.8844e-03 2.5679e-03 1.0110e-02 1.9840e-05 1.8318e-02 3.6019e-02 0:00:20 1765
236 6.7034e-03 6.8654e-03 2.5951e-03 9.9774e-03 1.9494e-05 1.8527e-02 3.5669e-02 0:00:16 1764
237 6.5235e-03 6.8041e-03 2.5763e-03 9.8668e-03 1.8890e-05 1.8745e-02 3.5523e-02 0:00:12 1763
238 6.2473e-03 6.6580e-03 2.5141e-03 9.7914e-03 1.8252e-05 1.8877e-02 3.6535e-02 0:00:10 1762
239 5.9390e-03 6.5139e-03 2.4524e-03 9.7402e-03 1.7796e-05 1.8393e-02 3.5362e-02 0:00:08 1761
240 5.6693e-03 6.3946e-03 2.4132e-03 9.6786e-03 1.7548e-05 1.7509e-02 3.2781e-02 0:00:06 1760
241 5.5985e-03 6.3055e-03 2.4026e-03 9.6359e-03 1.7610e-05 1.6554e-02 3.0575e-02 0:00:05 1759
242 5.6731e-03 6.1472e-03 2.3818e-03 9.5819e-03 1.7586e-05 1.5863e-02 2.8795e-02 0:00:04 1758

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
243 5.6817e-03 5.9806e-03 2.3322e-03 9.4771e-03 1.7356e-05 1.5622e-02 2.8157e-02 0:00:03 1757
244 5.7028e-03 5.8101e-03 2.2602e-03 9.3498e-03 1.7349e-05 1.5378e-02 2.7727e-02 0:00:03 1756
245 5.6541e-03 5.7322e-03 2.2044e-03 9.2143e-03 1.7220e-05 1.5327e-02 2.8116e-02 0:05:53 1755
246 5.5547e-03 5.7412e-03 2.1662e-03 9.0847e-03 1.7264e-05 1.5591e-02 2.9318e-02 0:04:42 1754
247 5.5561e-03 5.7299e-03 2.1352e-03 8.9015e-03 1.7208e-05 1.5789e-02 2.9833e-02 0:03:46 1753
248 5.4069e-03 5.7039e-03 2.1200e-03 8.7052e-03 1.6813e-05 1.5808e-02 2.9230e-02 0:03:00 1752

249 5.2094e-03 5.6288e-03 2.0993e-03 8.5455e-03 1.5997e-05 1.5650e-02 2.8884e-02 0:02:24 1751
250 4.9878e-03 5.5215e-03 2.0548e-03 8.4023e-03 1.5085e-05 1.5370e-02 2.8730e-02 0:01:55 1750
251 4.7603e-03 5.3726e-03 1.9666e-03 8.2621e-03 1.4295e-05 1.5069e-02 2.8236e-02 0:01:32 1749
252 4.6567e-03 5.2397e-03 1.8790e-03 8.1162e-03 1.3913e-05 1.4609e-02 2.6991e-02 0:01:14 1748
253 4.6063e-03 5.1277e-03 1.8154e-03 7.9681e-03 1.3885e-05 1.4112e-02 2.5410e-02 0:00:59 1747

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
254 4.6271e-03 5.0031e-03 1.7845e-03 7.8602e-03 1.4059e-05 1.3708e-02 2.3965e-02 0:00:47 1746
255 4.6289e-03 4.8886e-03 1.8014e-03 7.7399e-03 1.4178e-05 1.3315e-02 2.3059e-02 0:00:38 1745
256 4.5991e-03 4.7468e-03 1.7929e-03 7.5740e-03 1.4241e-05 1.2904e-02 2.2547e-02 0:00:30 1744
257 4.5694e-03 4.6198e-03 1.7790e-03 7.4599e-03 1.4176e-05 1.2908e-02 2.2972e-02 0:00:24 1743
258 4.4227e-03 4.5606e-03 1.7467e-03 7.3010e-03 1.4130e-05 1.3219e-02 2.4153e-02 0:00:19 1742
259 4.3123e-03 4.5400e-03 1.7140e-03 7.1540e-03 1.3895e-05 1.3558e-02 2.4975e-02 0:00:15 1741
260 4.1405e-03 4.5405e-03 1.6855e-03 6.9896e-03 1.3482e-05 1.3531e-02 2.4538e-02 0:00:12 1740
261 3.9927e-03 4.4887e-03 1.6679e-03 6.8083e-03 1.2900e-05 1.3323e-02 2.4167e-02 0:00:10 1739
262 3.8303e-03 4.3942e-03 1.6438e-03 6.6533e-03 1.2213e-05 1.2749e-02 2.3018e-02 0:00:08 1738
263 3.6751e-03 4.2543e-03 1.5981e-03 6.5222e-03 1.1451e-05 1.2032e-02 2.1520e-02 0:00:06 1737
264 3.5803e-03 4.0991e-03 1.5477e-03 6.4353e-03 1.0947e-05 1.1542e-02 2.0723e-02 0:00:05 1736

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
265 3.5965e-03 3.9766e-03 1.4823e-03 6.3251e-03 1.0965e-05 1.1329e-02 2.0388e-02 0:00:04 1735
266 3.6457e-03 3.8890e-03 1.4344e-03 6.2209e-03 1.1191e-05 1.1185e-02 1.9772e-02 0:00:03 1734
267 3.6221e-03 3.7935e-03 1.4236e-03 6.1211e-03 1.1444e-05 1.0981e-02 1.9282e-02 0:00:03 1733
268 3.6045e-03 3.7010e-03 1.4145e-03 6.0132e-03 1.1707e-05 1.0912e-02 1.9202e-02 0:00:02 1732
269 3.4853e-03 3.6212e-03 1.4039e-03 5.9189e-03 1.1571e-05 1.0986e-02 1.9609e-02 0:00:02 1731
270 3.3601e-03 3.5582e-03 1.4089e-03 5.8496e-03 1.1057e-05 1.1152e-02 2.0385e-02 0:00:01 1730
271 3.2877e-03 3.5134e-03 1.3898e-03 5.7445e-03 1.0650e-05 1.1330e-02 2.1055e-02 0:05:47 1729
272 3.2362e-03 3.4883e-03 1.3685e-03 5.6340e-03 1.0448e-05 1.1329e-02 2.1138e-02 0:04:37 1728

273 3.1961e-03 3.4612e-03 1.3578e-03 5.5098e-03 1.0312e-05 1.1235e-02 2.0676e-02 0:03:42 1727
274 3.1410e-03 3.4194e-03 1.3570e-03 5.3942e-03 1.0098e-05 1.1026e-02 2.0044e-02 0:02:57 1726
275 3.1018e-03 3.3492e-03 1.3501e-03 5.2903e-03 9.7750e-06 1.0846e-02 1.9770e-02 0:02:22 1725

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
276 3.0615e-03 3.2749e-03 1.3315e-03 5.2139e-03 9.3952e-06 1.0766e-02 1.9628e-02 0:01:53 1724
277 3.0940e-03 3.2058e-03 1.3071e-03 5.1582e-03 9.1404e-06 1.0689e-02 1.9637e-02 0:01:31 1723
278 3.1269e-03 3.1645e-03 1.2626e-03 5.0642e-03 9.0013e-06 1.0639e-02 1.9519e-02 0:01:12 1722
279 3.1094e-03 3.1045e-03 1.2466e-03 4.9816e-03 9.1743e-06 1.0514e-02 1.9100e-02 0:00:58 1721
280 3.0759e-03 3.0426e-03 1.2515e-03 4.9271e-03 9.4166e-06 1.0285e-02 1.8780e-02 0:00:46 1720
281 3.0724e-03 2.9914e-03 1.2610e-03 4.8888e-03 9.6614e-06 1.0082e-02 1.8441e-02 0:00:37 1719
282 3.0724e-03 2.9477e-03 1.2683e-03 4.8757e-03 9.7398e-06 1.0162e-02 1.8559e-02 0:00:30 1718
283 3.0027e-03 2.9128e-03 1.2664e-03 4.8635e-03 9.5303e-06 1.0349e-02 1.9232e-02 0:00:24 1717
284 2.9399e-03 2.9034e-03 1.2482e-03 4.8511e-03 9.2237e-06 1.0519e-02 1.9947e-02 0:00:19 1716
285 2.8768e-03 2.9044e-03 1.2394e-03 4.8347e-03 8.9681e-06 1.0609e-02 2.0251e-02 0:00:15 1715
286 2.8328e-03 2.8881e-03 1.2452e-03 4.8272e-03 8.8440e-06 1.0689e-02 2.0176e-02 0:00:12 1714

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
287 2.8389e-03 2.8911e-03 1.2564e-03 4.8316e-03 8.6803e-06 1.0807e-02 2.0126e-02 0:00:10 1713
288 2.8666e-03 2.8777e-03 1.2588e-03 4.8557e-03 8.4839e-06 1.0882e-02 2.0086e-02 0:00:08 1712
289 2.8909e-03 2.8832e-03 1.2445e-03 4.8418e-03 8.3362e-06 1.0970e-02 2.0263e-02 0:00:06 1711
290 2.9305e-03 2.9047e-03 1.2151e-03 4.7986e-03 8.2779e-06 1.1065e-02 2.0618e-02 0:00:05 1710
291 2.9868e-03 2.9127e-03 1.2025e-03 4.7841e-03 8.4859e-06 1.1096e-02 2.0724e-02 0:00:04 1709
292 3.0561e-03 2.9050e-03 1.2027e-03 4.7686e-03 8.7737e-06 1.1013e-02 2.0460e-02 0:00:03 1708
293 3.0950e-03 2.8814e-03 1.2162e-03 4.7755e-03 9.0351e-06 1.0878e-02 2.0103e-02 0:00:03 1707
294 3.1147e-03 2.8667e-03 1.2314e-03 4.8086e-03 9.3092e-06 1.0696e-02 1.9749e-02 0:00:02 1706
295 3.1000e-03 2.8679e-03 1.2397e-03 4.8533e-03 9.4865e-06 1.0574e-02 1.9848e-02 0:05:43 1705
296 3.0853e-03 2.8799e-03 1.2335e-03 4.8706e-03 9.5893e-06 1.0584e-02 2.0262e-02 0:04:34 1704

297 3.0161e-03 2.9083e-03 1.2318e-03 4.8979e-03 9.7358e-06 1.0816e-02 2.0862e-02 0:03:39 1703

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
298 3.1044e-03 2.9125e-03 1.2437e-03 4.9463e-03 9.7448e-06 1.1194e-02 2.1982e-02 0:02:55 1702
299 3.1059e-03 2.9453e-03 1.2796e-03 5.0295e-03 9.6794e-06 1.1403e-02 2.2373e-02 0:02:20 1701
300 3.1052e-03 2.9798e-03 1.3063e-03 5.1025e-03 9.4457e-06 1.1610e-02 2.2491e-02 0:01:52 1700
301 3.0888e-03 3.0347e-03 1.3201e-03 5.1788e-03 9.1471e-06 1.1698e-02 2.2552e-02 0:01:29 1699
302 3.1004e-03 3.1086e-03 1.3204e-03 5.2097e-03 9.0230e-06 1.1769e-02 2.2602e-02 0:01:12 1698
303 3.1218e-03 3.1714e-03 1.2989e-03 5.2224e-03 9.1204e-06 1.1836e-02 2.2593e-02 0:00:57 1697
304 3.2041e-03 3.1820e-03 1.2749e-03 5.2379e-03 9.4202e-06 1.1804e-02 2.2354e-02 0:00:46 1696
305 3.2233e-03 3.1989e-03 1.2869e-03 5.2825e-03 9.7440e-06 1.1637e-02 2.1670e-02 0:00:37 1695
306 3.3819e-03 3.1692e-03 1.2962e-03 5.3025e-03 9.9896e-06 1.1536e-02 2.1063e-02 0:00:29 1694
307 3.4315e-03 3.1676e-03 1.2985e-03 5.3656e-03 1.0091e-05 1.1637e-02 2.1026e-02 0:00:23 1693
308 3.4266e-03 3.2068e-03 1.3022e-03 5.4012e-03 1.0179e-05 1.1794e-02 2.1693e-02 0:00:19 1692

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
309 3.4109e-03 3.2624e-03 1.3146e-03 5.4315e-03 1.0509e-05 1.1883e-02 2.2353e-02 0:00:15 1691
310 3.4612e-03 3.3168e-03 1.3313e-03 5.4550e-03 1.1058e-05 1.1778e-02 2.2643e-02 0:00:12 1690
311 3.5221e-03 3.3589e-03 1.3519e-03 5.4926e-03 1.1196e-05 1.1876e-02 2.2837e-02 0:00:10 1689
312 3.4005e-03 3.3963e-03 1.3940e-03 5.5815e-03 1.0960e-05 1.1866e-02 2.2414e-02 0:00:08 1688
313 3.4178e-03 3.3978e-03 1.4047e-03 5.6513e-03 1.0425e-05 1.1958e-02 2.2568e-02 0:00:06 1687
314 3.3028e-03 3.4136e-03 1.3953e-03 5.7363e-03 1.0026e-05 1.2019e-02 2.2858e-02 0:00:05 1686
315 3.2698e-03 3.4568e-03 1.3877e-03 5.7802e-03 9.8442e-06 1.2117e-02 2.3066e-02 0:00:04 1685
316 3.2385e-03 3.5022e-03 1.3711e-03 5.8147e-03 1.0085e-05 1.2025e-02 2.2736e-02 0:00:03 1684
317 3.3425e-03 3.5296e-03 1.3739e-03 5.8313e-03 1.0466e-05 1.1954e-02 2.2179e-02 0:05:39 1683
318 3.4235e-03 3.5698e-03 1.3995e-03 5.8993e-03 1.0750e-05 1.1811e-02 2.1460e-02 0:04:31 1682
319 3.6305e-03 3.5366e-03 1.4134e-03 5.9199e-03 1.0934e-05 1.1723e-02 2.0872e-02 0:03:37 1681

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

320 3.6963e-03 3.5468e-03 1.4306e-03 5.9527e-03 1.1136e-05 1.1886e-02 2.0972e-02 0:02:53 1680
321 3.6994e-03 3.6033e-03 1.4388e-03 5.9807e-03 1.1249e-05 1.2260e-02 2.1910e-02 0:02:19 1679
322 3.7244e-03 3.6639e-03 1.4359e-03 5.9564e-03 1.1461e-05 1.2486e-02 2.2690e-02 0:01:51 1678
323 3.6718e-03 3.7434e-03 1.4463e-03 5.9261e-03 1.1705e-05 1.2479e-02 2.3002e-02 0:01:29 1677
324 3.7529e-03 3.7361e-03 1.4628e-03 5.9028e-03 1.1753e-05 1.2453e-02 2.3090e-02 0:01:11 1676
325 3.6811e-03 3.7520e-03 1.4867e-03 5.9193e-03 1.1343e-05 1.2210e-02 2.2465e-02 0:00:57 1675
326 3.5194e-03 3.7361e-03 1.4946e-03 5.9483e-03 1.0672e-05 1.2016e-02 2.1979e-02 0:00:45 1674
327 3.3826e-03 3.6988e-03 1.4628e-03 5.9794e-03 1.0189e-05 1.1880e-02 2.1961e-02 0:00:36 1673
328 3.3442e-03 3.6854e-03 1.4464e-03 5.9854e-03 1.0060e-05 1.1759e-02 2.1992e-02 0:00:29 1672
329 3.3559e-03 3.6874e-03 1.4350e-03 5.9824e-03 1.0240e-05 1.1670e-02 2.1728e-02 0:00:23 1671
330 3.4197e-03 3.7000e-03 1.4317e-03 5.9594e-03 1.0596e-05 1.1608e-02 2.1320e-02 0:00:18 1670

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
331 3.4549e-03 3.7071e-03 1.4398e-03 5.9894e-03 1.0829e-05 1.1382e-02 2.0562e-02 0:00:15 1669
332 3.6345e-03 3.6520e-03 1.4417e-03 5.9730e-03 1.1069e-05 1.1235e-02 1.9946e-02 0:00:12 1668
333 3.6367e-03 3.6136e-03 1.4377e-03 5.9625e-03 1.1165e-05 1.1353e-02 2.0027e-02 0:00:09 1667
334 3.6274e-03 3.6068e-03 1.4270e-03 5.9433e-03 1.1175e-05 1.1658e-02 2.0790e-02 0:00:08 1666
335 3.5930e-03 3.6399e-03 1.4216e-03 5.9024e-03 1.1177e-05 1.1911e-02 2.1614e-02 0:00:06 1665
336 3.5759e-03 3.6684e-03 1.4293e-03 5.8314e-03 1.1357e-05 1.1990e-02 2.2020e-02 0:00:05 1664
337 3.4577e-03 3.7058e-03 1.4411e-03 5.7914e-03 1.1265e-05 1.1787e-02 2.1773e-02 0:00:04 1663
338 3.4686e-03 3.6625e-03 1.4423e-03 5.7305e-03 1.0674e-05 1.1539e-02 2.1272e-02 0:00:03 1662
339 3.3268e-03 3.6211e-03 1.4332e-03 5.6938e-03 1.0029e-05 1.1416e-02 2.1137e-02 0:00:02 1661
340 3.2403e-03 3.5757e-03 1.4110e-03 5.6684e-03 9.5786e-06 1.1286e-02 2.0985e-02 0:00:02 1660
341 3.2319e-03 3.5441e-03 1.3899e-03 5.6263e-03 9.3594e-06 1.1182e-02 2.0675e-02 0:00:02 1659

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
342 3.1684e-03 3.5490e-03 1.3862e-03 5.5906e-03 9.3986e-06 1.1164e-02 2.0324e-02 0:00:01 1658
343 3.2953e-03 3.5011e-03 1.3726e-03 5.5255e-03 9.7432e-06 1.1051e-02 1.9911e-02 0:05:32 1657

344 3.3484e-03 3.4653e-03 1.3775e-03 5.5136e-03 1.0043e-05 1.0831e-02 1.9227e-02 0:04:26 1656
345 3.3164e-03 3.4266e-03 1.3854e-03 5.5306e-03 1.0149e-05 1.0674e-02 1.8899e-02 0:03:32 1655
346 3.3739e-03 3.3520e-03 1.3798e-03 5.4801e-03 1.0046e-05 1.0673e-02 1.8994e-02 0:02:50 1654
347 3.3557e-03 3.3012e-03 1.3586e-03 5.4407e-03 9.9750e-06 1.0768e-02 1.9377e-02 0:02:16 1653
348 3.3151e-03 3.2977e-03 1.3372e-03 5.4011e-03 1.0137e-05 1.0940e-02 1.9983e-02 0:01:49 1652
349 3.2966e-03 3.3054e-03 1.3214e-03 5.3271e-03 1.0254e-05 1.0932e-02 2.0155e-02 0:01:27 1651
350 3.2876e-03 3.2939e-03 1.3275e-03 5.2859e-03 1.0156e-05 1.0788e-02 1.9922e-02 0:01:09 1650
351 3.2025e-03 3.2717e-03 1.3305e-03 5.2538e-03 9.6837e-06 1.0765e-02 1.9868e-02 0:00:55 1649
352 3.0937e-03 3.2358e-03 1.3258e-03 5.2407e-03 9.1774e-06 1.0846e-02 1.9975e-02 0:00:44 1648

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
353 3.0532e-03 3.2161e-03 1.3190e-03 5.2237e-03 8.7244e-06 1.0954e-02 2.0130e-02 0:00:35 1647
354 3.0622e-03 3.2136e-03 1.3054e-03 5.1836e-03 8.5754e-06 1.1042e-02 2.0134e-02 0:00:28 1646
355 3.0668e-03 3.2259e-03 1.2951e-03 5.1376e-03 8.7203e-06 1.1146e-02 2.0031e-02 0:00:23 1645
356 3.0412e-03 3.2363e-03 1.2903e-03 5.0953e-03 8.8994e-06 1.1028e-02 1.9683e-02 0:00:18 1644
357 3.1926e-03 3.1711e-03 1.2883e-03 5.0759e-03 9.1664e-06 1.0772e-02 1.9091e-02 0:00:14 1643
358 3.2370e-03 3.1328e-03 1.2951e-03 5.0908e-03 9.3045e-06 1.0517e-02 1.8551e-02 0:00:12 1642
359 3.2247e-03 3.0849e-03 1.2992e-03 5.0920e-03 9.2711e-06 1.0446e-02 1.8479e-02 0:00:09 1641
360 3.2304e-03 3.0530e-03 1.2834e-03 5.0813e-03 9.2105e-06 1.0520e-02 1.8886e-02 0:00:07 1640
361 3.1840e-03 3.0570e-03 1.2697e-03 5.0540e-03 9.4525e-06 1.0528e-02 1.9433e-02 0:00:06 1639
362 3.1841e-03 3.0592e-03 1.2555e-03 5.0195e-03 9.7696e-06 1.0567e-02 1.9540e-02 0:00:05 1638
363 3.1041e-03 3.0819e-03 1.2618e-03 5.0369e-03 9.8905e-06 1.0605e-02 1.9737e-02 0:00:04 1637

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
364 3.1784e-03 3.0681e-03 1.2794e-03 5.0566e-03 9.6266e-06 1.0767e-02 2.0012e-02 0:05:30 1636
365 3.1031e-03 3.0664e-03 1.3005e-03 5.1087e-03 9.2009e-06 1.0931e-02 2.0312e-02 0:04:24 1635
366 3.0560e-03 3.0845e-03 1.3017e-03 5.1537e-03 8.7798e-06 1.1140e-02 2.0790e-02 0:03:31 1634
367 3.0595e-03 3.1340e-03 1.2932e-03 5.1693e-03 8.6940e-06 1.1270e-02 2.0997e-02 0:02:49 1633

368 2.9605e-03 3.1979e-03 1.2847e-03 5.1726e-03 8.8277e-06 1.1416e-02 2.1118e-02 0:02:15 1632
369 3.1013e-03 3.1963e-03 1.2726e-03 5.1340e-03 9.1648e-06 1.1395e-02 2.0869e-02 0:01:48 1631
370 3.1234e-03 3.2125e-03 1.2804e-03 5.1639e-03 9.4169e-06 1.1157e-02 2.0123e-02 0:01:26 1630
371 3.2891e-03 3.1630e-03 1.2899e-03 5.1941e-03 9.6091e-06 1.0898e-02 1.9280e-02 0:01:09 1629
372 3.3214e-03 3.1312e-03 1.2894e-03 5.2300e-03 9.6245e-06 1.0890e-02 1.9094e-02 0:00:55 1628
373 3.3723e-03 3.1351e-03 1.2737e-03 5.2406e-03 9.5313e-06 1.1027e-02 1.9649e-02 0:00:44 1627
374 3.3411e-03 3.1652e-03 1.2751e-03 5.2259e-03 9.7143e-06 1.1205e-02 2.0546e-02 0:00:35 1626

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
375 3.3417e-03 3.1959e-03 1.2818e-03 5.2083e-03 1.0146e-05 1.1148e-02 2.0769e-02 0:00:28 1625
376 3.4084e-03 3.2316e-03 1.2965e-03 5.2018e-03 1.0490e-05 1.1030e-02 2.0467e-02 0:00:23 1624
377 3.3038e-03 3.2640e-03 1.3321e-03 5.2581e-03 1.0422e-05 1.0938e-02 1.9985e-02 0:00:18 1623
378 3.3180e-03 3.2546e-03 1.3532e-03 5.3179e-03 9.9617e-06 1.1059e-02 2.0141e-02 0:00:14 1622
379 3.2187e-03 3.2477e-03 1.3455e-03 5.3990e-03 9.4857e-06 1.1131e-02 2.0527e-02 0:00:12 1621
380 3.1439e-03 3.2802e-03 1.3272e-03 5.4546e-03 9.3792e-06 1.1273e-02 2.0987e-02 0:00:09 1620
381 3.0976e-03 3.3270e-03 1.3099e-03 5.4744e-03 9.5329e-06 1.1348e-02 2.0970e-02 0:00:07 1619
382 3.0843e-03 3.3772e-03 1.3082e-03 5.4926e-03 9.7850e-06 1.1271e-02 2.0545e-02 0:00:06 1618
383 3.2120e-03 3.3804e-03 1.3086e-03 5.5034e-03 9.9909e-06 1.1126e-02 1.9905e-02 0:00:05 1617
384 3.3951e-03 3.3532e-03 1.3221e-03 5.5224e-03 1.0170e-05 1.0954e-02 1.9291e-02 0:00:04 1616
385 3.4764e-03 3.3266e-03 1.3322e-03 5.5623e-03 1.0300e-05 1.0980e-02 1.9152e-02 0:00:03 1615

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
386 3.5184e-03 3.3536e-03 1.3397e-03 5.5775e-03 1.0351e-05 1.1191e-02 1.9658e-02 0:05:25 1614
387 3.5483e-03 3.3872e-03 1.3368e-03 5.5464e-03 1.0555e-05 1.1518e-02 2.0621e-02 0:04:20 1613
388 3.4980e-03 3.4631e-03 1.3479e-03 5.5125e-03 1.0723e-05 1.1534e-02 2.0996e-02 0:03:28 1612
389 3.6310e-03 3.4750e-03 1.3581e-03 5.4650e-03 1.0852e-05 1.1405e-02 2.0595e-02 0:02:46 1611
390 3.5448e-03 3.4917e-03 1.3820e-03 5.4545e-03 1.0720e-05 1.1222e-02 1.9833e-02 0:02:13 1610
391 3.4334e-03 3.4761e-03 1.4004e-03 5.4966e-03 1.0229e-05 1.1067e-02 1.9632e-02 0:01:46 1609

392 3.2831e-03 3.4571e-03 1.3880e-03 5.5433e-03 9.6914e-06 1.1019e-02 1.9774e-02 0:01:25 1608
393 3.2166e-03 3.4415e-03 1.3608e-03 5.5604e-03 9.5100e-06 1.0926e-02 1.9792e-02 0:01:08 1607
394 3.1792e-03 3.4349e-03 1.3440e-03 5.5588e-03 9.6175e-06 1.0898e-02 1.9627e-02 0:00:54 1606
395 3.1327e-03 3.4709e-03 1.3417e-03 5.5578e-03 9.7901e-06 1.0749e-02 1.9216e-02 0:00:43 1605
396 3.3308e-03 3.4313e-03 1.3343e-03 5.5298e-03 1.0038e-05 1.0632e-02 1.8635e-02 0:00:35 1604

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
397 3.3117e-03 3.4201e-03 1.3451e-03 5.5697e-03 1.0060e-05 1.0381e-02 1.7959e-02 0:00:28 1603
398 3.3936e-03 3.3623e-03 1.3418e-03 5.5382e-03 1.0055e-05 1.0306e-02 1.7807e-02 0:00:22 1602
399 3.3819e-03 3.3348e-03 1.3315e-03 5.5082e-03 1.0078e-05 1.0556e-02 1.8394e-02 0:00:18 1601
400 3.4186e-03 3.3668e-03 1.3214e-03 5.4536e-03 1.0109e-05 1.0859e-02 1.9160e-02 0:00:14 1600
401 3.4373e-03 3.3947e-03 1.3258e-03 5.3830e-03 1.0259e-05 1.0918e-02 1.9209e-02 0:00:11 1599
402 3.3383e-03 3.4400e-03 1.3327e-03 5.3234e-03 1.0354e-05 1.0769e-02 1.8643e-02 0:00:09 1598
403 3.3335e-03 3.4051e-03 1.3412e-03 5.2671e-03 1.0000e-05 1.0555e-02 1.8375e-02 0:00:07 1597
404 3.2053e-03 3.3706e-03 1.3447e-03 5.2374e-03 9.4746e-06 1.0340e-02 1.8186e-02 0:00:06 1596
405 3.0313e-03 3.3326e-03 1.3243e-03 5.2194e-03 8.9000e-06 1.0182e-02 1.7958e-02 0:00:05 1595
406 2.9814e-03 3.2923e-03 1.3009e-03 5.1866e-03 8.6250e-06 1.0035e-02 1.7724e-02 0:00:04 1594
407 2.9630e-03 3.2699e-03 1.2877e-03 5.1441e-03 8.7380e-06 1.0024e-02 1.7506e-02 0:00:03 1593

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
408 2.9121e-03 3.2646e-03 1.2847e-03 5.1168e-03 8.9177e-06 9.8880e-03 1.7103e-02 0:05:21 1592
409 3.0677e-03 3.2016e-03 1.2812e-03 5.0805e-03 9.1295e-06 9.6653e-03 1.6542e-02 0:04:16 1591
410 3.1303e-03 3.1493e-03 1.2809e-03 5.0754e-03 9.2626e-06 9.4858e-03 1.6254e-02 0:03:25 1590
411 3.1296e-03 3.1041e-03 1.2809e-03 5.0431e-03 9.1975e-06 9.4416e-03 1.6231e-02 0:02:44 1589
412 3.0783e-03 3.0488e-03 1.2550e-03 4.9948e-03 9.0580e-06 9.6271e-03 1.6657e-02 0:02:11 1588
413 3.0648e-03 3.0461e-03 1.2270e-03 4.9091e-03 9.0281e-06 9.7658e-03 1.7060e-02 0:01:45 1587
414 3.0887e-03 3.0480e-03 1.2146e-03 4.8300e-03 9.2080e-06 9.7921e-03 1.6932e-02 0:01:24 1586
415 3.0481e-03 3.0350e-03 1.2151e-03 4.7585e-03 9.2677e-06 9.6146e-03 1.6445e-02 0:01:07 1585

416 2.9774e-03 3.0141e-03 1.2205e-03 4.7230e-03 9.0585e-06 9.4574e-03 1.6323e-02 0:00:54 1584
417 2.8741e-03 2.9798e-03 1.2175e-03 4.7020e-03 8.5664e-06 9.4227e-03 1.6379e-02 0:00:43 1583
418 2.7586e-03 2.9425e-03 1.2036e-03 4.6774e-03 8.1406e-06 9.4150e-03 1.6428e-02 0:00:34 1582

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
419 2.7332e-03 2.9163e-03 1.1811e-03 4.6393e-03 7.8525e-06 9.4168e-03 1.6409e-02 0:00:27 1581
420 2.6936e-03 2.9067e-03 1.1694e-03 4.5911e-03 7.8642e-06 9.4352e-03 1.6359e-02 0:00:22 1580
421 2.6483e-03 2.9049e-03 1.1708e-03 4.5354e-03 7.9660e-06 9.2819e-03 1.5955e-02 0:00:17 1579
422 2.7880e-03 2.8423e-03 1.1621e-03 4.5006e-03 8.1807e-06 9.0338e-03 1.5394e-02 0:00:14 1578
423 2.8466e-03 2.7979e-03 1.1621e-03 4.5045e-03 8.2711e-06 8.8255e-03 1.5013e-02 0:00:11 1577
424 2.8747e-03 2.7420e-03 1.1619e-03 4.5157e-03 8.1762e-06 8.7814e-03 1.5013e-02 0:00:09 1576
425 2.8348e-03 2.7135e-03 1.1446e-03 4.4768e-03 8.0334e-06 8.8548e-03 1.5359e-02 0:00:07 1575
426 2.7920e-03 2.7042e-03 1.1193e-03 4.4226e-03 8.1282e-06 8.9432e-03 1.5707e-02 0:00:06 1574
427 2.7668e-03 2.7204e-03 1.1085e-03 4.3846e-03 8.3955e-06 8.9466e-03 1.5751e-02 0:00:05 1573
428 2.8167e-03 2.7022e-03 1.1075e-03 4.3276e-03 8.4997e-06 8.8957e-03 1.5644e-02 0:00:04 1572
429 2.7768e-03 2.6997e-03 1.1198e-03 4.3290e-03 8.3285e-06 8.8425e-03 1.5416e-02 0:00:03 1571

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
430 2.6814e-03 2.6800e-03 1.1281e-03 4.3503e-03 7.9834e-06 8.9393e-03 1.5733e-02 0:05:16 1570
431 2.6186e-03 2.6622e-03 1.1220e-03 4.3689e-03 7.5652e-06 9.0300e-03 1.5994e-02 0:04:13 1569
432 2.5914e-03 2.6718e-03 1.1068e-03 4.3595e-03 7.3232e-06 9.1749e-03 1.6306e-02 0:03:22 1568
433 2.5694e-03 2.6908e-03 1.0958e-03 4.3381e-03 7.4869e-06 9.3021e-03 1.6496e-02 0:02:42 1567
434 2.5487e-03 2.7207e-03 1.0965e-03 4.3226e-03 7.7300e-06 9.2402e-03 1.6212e-02 0:02:09 1566
435 2.7076e-03 2.6986e-03 1.0940e-03 4.3161e-03 7.9541e-06 9.0653e-03 1.5781e-02 0:01:43 1565
436 2.7639e-03 2.6628e-03 1.1007e-03 4.3469e-03 8.0668e-06 8.8707e-03 1.5289e-02 0:01:23 1564
437 2.8291e-03 2.6269e-03 1.1044e-03 4.3646e-03 7.9787e-06 8.8617e-03 1.5304e-02 0:01:06 1563
438 2.8291e-03 2.6121e-03 1.0851e-03 4.3551e-03 7.8713e-06 9.0197e-03 1.5788e-02 0:00:53 1562
439 2.8120e-03 2.6281e-03 1.0748e-03 4.3294e-03 7.9939e-06 9.1159e-03 1.6360e-02 0:00:42 1561

440 2.8489e-03 2.6478e-03 1.0763e-03 4.2957e-03 8.2906e-06 9.0815e-03 1.6444e-02 0:00:34 1560

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
441 2.8712e-03 2.6645e-03 1.0838e-03 4.2843e-03 8.5736e-06 8.9479e-03 1.5981e-02 0:00:27 1559
442 2.8407e-03 2.6678e-03 1.1063e-03 4.3136e-03 8.4948e-06 8.8953e-03 1.5674e-02 0:00:22 1558
443 2.7289e-03 2.6618e-03 1.1207e-03 4.3735e-03 8.2046e-06 8.9879e-03 1.5834e-02 0:00:17 1557
444 2.6686e-03 2.6692e-03 1.1197e-03 4.4336e-03 7.8505e-06 9.1220e-03 1.6270e-02 0:00:14 1556
445 2.5635e-03 2.7093e-03 1.1054e-03 4.4808e-03 7.7382e-06 9.2299e-03 1.6645e-02 0:00:11 1555
446 2.6213e-03 2.7138e-03 1.0870e-03 4.4732e-03 7.8083e-06 9.3657e-03 1.6895e-02 0:00:09 1554
447 2.6096e-03 2.7491e-03 1.0872e-03 4.4841e-03 8.0530e-06 9.3358e-03 1.6576e-02 0:00:07 1553
448 2.7921e-03 2.7490e-03 1.0935e-03 4.5087e-03 8.2261e-06 9.1773e-03 1.6031e-02 0:00:06 1552
449 2.8788e-03 2.7370e-03 1.1058e-03 4.5439e-03 8.3311e-06 9.0408e-03 1.5700e-02 0:00:05 1551
450 2.9253e-03 2.7165e-03 1.1169e-03 4.5676e-03 8.3660e-06 9.0975e-03 1.5731e-02 0:00:04 1550
451 2.9356e-03 2.7440e-03 1.1089e-03 4.5623e-03 8.3687e-06 9.2886e-03 1.6216e-02 0:00:03 1549

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
452 2.9609e-03 2.7732e-03 1.1039e-03 4.5324e-03 8.4538e-06 9.4921e-03 1.6837e-02 0:00:02 1548
453 2.9481e-03 2.8260e-03 1.1113e-03 4.5057e-03 8.6253e-06 9.4407e-03 1.6767e-02 0:00:02 1547
454 3.0525e-03 2.8274e-03 1.1194e-03 4.4805e-03 8.8276e-06 9.3060e-03 1.6283e-02 0:05:11 1546
455 2.9811e-03 2.8328e-03 1.1444e-03 4.5001e-03 8.7610e-06 9.2102e-03 1.5993e-02 0:04:08 1545
456 2.8588e-03 2.8268e-03 1.1577e-03 4.5500e-03 8.4507e-06 9.1486e-03 1.5961e-02 0:03:19 1544
457 2.7574e-03 2.8276e-03 1.1472e-03 4.5982e-03 8.1015e-06 9.1249e-03 1.6009e-02 0:02:39 1543
458 2.7154e-03 2.8183e-03 1.1256e-03 4.6228e-03 7.9952e-06 9.2195e-03 1.6290e-02 0:02:07 1542
459 2.6225e-03 2.8550e-03 1.1216e-03 4.6506e-03 8.1145e-06 9.1759e-03 1.6199e-02 0:01:41 1541
460 2.7750e-03 2.8370e-03 1.1155e-03 4.6256e-03 8.3499e-06 9.1335e-03 1.5927e-02 0:01:21 1540
461 2.7803e-03 2.8573e-03 1.1260e-03 4.6615e-03 8.4833e-06 8.9447e-03 1.5358e-02 0:01:05 1539
462 2.9252e-03 2.8170e-03 1.1298e-03 4.6693e-03 8.4960e-06 8.8095e-03 1.5072e-02 0:00:52 1538

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

463 2.8978e-03 2.7924e-03 1.1327e-03 4.6794e-03 8.5330e-06 8.8477e-03 1.5109e-02 0:00:41 1537
464 2.9092e-03 2.8150e-03 1.1236e-03 4.6439e-03 8.4980e-06 9.0344e-03 1.5593e-02 0:00:33 1536
465 2.9397e-03 2.8373e-03 1.1181e-03 4.5851e-03 8.5344e-06 9.2708e-03 1.6100e-02 0:00:26 1535
466 2.9898e-03 2.8655e-03 1.1213e-03 4.5216e-03 8.6001e-06 9.2142e-03 1.5803e-02 0:00:21 1534
467 2.9960e-03 2.8793e-03 1.1303e-03 4.4868e-03 8.6377e-06 9.0728e-03 1.5305e-02 0:00:17 1533
468 2.9192e-03 2.8726e-03 1.1454e-03 4.4628e-03 8.4339e-06 8.9811e-03 1.5216e-02 0:00:14 1532
469 2.7710e-03 2.8539e-03 1.1479e-03 4.4688e-03 8.0839e-06 8.8359e-03 1.5087e-02 0:00:11 1531
470 2.6487e-03 2.8158e-03 1.1289e-03 4.4636e-03 7.7750e-06 8.7710e-03 1.5034e-02 0:00:09 1530
471 2.5374e-03 2.8190e-03 1.1175e-03 4.4770e-03 7.6389e-06 8.7010e-03 1.4903e-02 0:00:07 1529
472 2.6252e-03 2.7866e-03 1.1115e-03 4.4305e-03 7.7504e-06 8.6561e-03 1.4743e-02 0:00:06 1528
473 2.6496e-03 2.7804e-03 1.1148e-03 4.4130e-03 7.9482e-06 8.5264e-03 1.4326e-02 0:00:04 1527

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
474 2.7211e-03 2.7542e-03 1.1169e-03 4.4230e-03 8.0300e-06 8.3360e-03 1.3955e-02 0:00:04 1526
475 2.7603e-03 2.7098e-03 1.1161e-03 4.4270e-03 8.0261e-06 8.1775e-03 1.3722e-02 0:00:03 1525
476 2.7357e-03 2.6584e-03 1.0988e-03 4.3892e-03 7.9431e-06 8.2273e-03 1.3797e-02 0:00:02 1524
477 2.7220e-03 2.6456e-03 1.0733e-03 4.3280e-03 7.7600e-06 8.4166e-03 1.4247e-02 0:05:06 1523
478 2.7230e-03 2.6587e-03 1.0589e-03 4.2495e-03 7.7259e-06 8.5406e-03 1.4454e-02 0:04:05 1522
479 2.7438e-03 2.6647e-03 1.0590e-03 4.1772e-03 7.8820e-06 8.4527e-03 1.4110e-02 0:03:16 1521
480 2.7238e-03 2.6638e-03 1.0644e-03 4.1246e-03 7.9388e-06 8.3250e-03 1.3739e-02 0:02:37 1520
481 2.6597e-03 2.6396e-03 1.0723e-03 4.0952e-03 7.6949e-06 8.1995e-03 1.3692e-02 0:02:05 1519
482 2.5392e-03 2.6094e-03 1.0688e-03 4.0763e-03 7.3238e-06 8.1252e-03 1.3588e-02 0:01:40 1518
483 2.4070e-03 2.5771e-03 1.0463e-03 4.0674e-03 7.0519e-06 8.0829e-03 1.3578e-02 0:01:20 1517
484 2.2952e-03 2.5787e-03 1.0376e-03 4.0552e-03 6.9342e-06 8.0873e-03 1.3633e-02 0:01:04 1516

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
485 2.3824e-03 2.5447e-03 1.0364e-03 3.9961e-03 7.0352e-06 8.1197e-03 1.3635e-02 0:00:51 1515
486 2.4232e-03 2.5348e-03 1.0452e-03 3.9743e-03 7.2390e-06 7.9592e-03 1.3237e-02 0:00:41 1514

487 2.4829e-03 2.5029e-03 1.0412e-03 3.9833e-03 7.2911e-06 7.7089e-03 1.2750e-02 0:00:33 1513
488 2.5186e-03 2.4463e-03 1.0353e-03 3.9767e-03 7.2397e-06 7.5803e-03 1.2566e-02 0:00:26 1512
489 2.5206e-03 2.3948e-03 1.0148e-03 3.9546e-03 7.1392e-06 7.6438e-03 1.2728e-02 0:00:21 1511
490 2.4653e-03 2.3836e-03 9.8431e-04 3.9005e-03 6.9942e-06 7.8105e-03 1.3112e-02 0:00:17 1510
491 2.4781e-03 2.3863e-03 9.7035e-04 3.8311e-03 7.0533e-06 7.8581e-03 1.3300e-02 0:00:13 1509
492 2.5164e-03 2.3833e-03 9.6833e-04 3.7741e-03 7.2136e-06 7.7512e-03 1.2996e-02 0:00:11 1508
493 2.5029e-03 2.3834e-03 9.7601e-04 3.7404e-03 7.3182e-06 7.6372e-03 1.2690e-02 0:00:09 1507
494 2.4570e-03 2.3563e-03 9.8839e-04 3.7354e-03 7.1252e-06 7.5749e-03 1.2628e-02 0:00:07 1506
495 2.3397e-03 2.3351e-03 9.8596e-04 3.7493e-03 6.8204e-06 7.5857e-03 1.2685e-02 0:00:05 1505

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
496 2.2602e-03 2.3260e-03 9.6894e-04 3.7520e-03 6.5655e-06 7.6346e-03 1.2951e-02 0:00:04 1504
497 2.1435e-03 2.3483e-03 9.5779e-04 3.7466e-03 6.5156e-06 7.7613e-03 1.3226e-02 0:00:03 1503
498 2.2298e-03 2.3371e-03 9.6390e-04 3.7114e-03 6.6534e-06 7.8015e-03 1.3302e-02 0:05:03 1502
499 2.2258e-03 2.3487e-03 9.6901e-04 3.7148e-03 6.7852e-06 7.6588e-03 1.2882e-02 0:04:02 1501
500 2.3645e-03 2.3140e-03 9.6210e-04 3.7206e-03 6.8023e-06 7.4787e-03 1.2539e-02 0:03:14 1500
501 2.3897e-03 2.2711e-03 9.6216e-04 3.7396e-03 6.8332e-06 7.4210e-03 1.2378e-02 0:02:35 1499
502 2.3960e-03 2.2505e-03 9.5245e-04 3.7397e-03 6.7698e-06 7.5222e-03 1.2621e-02 0:02:04 1498
503 2.3974e-03 2.2496e-03 9.2945e-04 3.7009e-03 6.6520e-06 7.6766e-03 1.3058e-02 0:01:39 1497
504 2.4488e-03 2.2629e-03 9.2425e-04 3.6507e-03 6.7426e-06 7.7410e-03 1.3326e-02 0:01:19 1496
505 2.4132e-03 2.2945e-03 9.2647e-04 3.6272e-03 7.0228e-06 7.6038e-03 1.3029e-02 0:01:03 1495
506 2.4741e-03 2.2848e-03 9.4202e-04 3.6127e-03 7.0917e-06 7.4633e-03 1.2614e-02 0:00:51 1494

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
507 2.4312e-03 2.2727e-03 9.5784e-04 3.6273e-03 7.0185e-06 7.3750e-03 1.2424e-02 0:00:40 1493
508 2.3232e-03 2.2491e-03 9.5618e-04 3.6694e-03 6.7720e-06 7.3710e-03 1.2435e-02 0:00:32 1492
509 2.2541e-03 2.2522e-03 9.3758e-04 3.7029e-03 6.5925e-06 7.4691e-03 1.2776e-02 0:00:26 1491
510 2.1565e-03 2.2877e-03 9.3041e-04 3.7290e-03 6.5914e-06 7.6106e-03 1.3178e-02 0:00:21 1490

511 2.2556e-03 2.2906e-03 9.2872e-04 3.7153e-03 6.7120e-06 7.7017e-03 1.3256e-02 0:00:17 1489
512 2.3141e-03 2.3005e-03 9.3435e-04 3.7319e-03 6.9091e-06 7.6051e-03 1.2956e-02 0:00:13 1488
513 2.3851e-03 2.2974e-03 9.3625e-04 3.7631e-03 7.0120e-06 7.4588e-03 1.2591e-02 0:00:11 1487
514 2.4346e-03 2.2643e-03 9.4200e-04 3.7865e-03 7.0112e-06 7.4095e-03 1.2421e-02 0:00:08 1486
515 2.4340e-03 2.2647e-03 9.4050e-04 3.7803e-03 6.9566e-06 7.5317e-03 1.2725e-02 0:00:07 1485
516 2.4749e-03 2.2817e-03 9.3129e-04 3.7500e-03 6.9743e-06 7.6945e-03 1.3126e-02 0:00:05 1484
517 2.5262e-03 2.3087e-03 9.2987e-04 3.6984e-03 6.9934e-06 7.7566e-03 1.3273e-02 0:00:04 1483

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
518 2.5513e-03 2.3319e-03 9.3328e-04 3.6574e-03 7.0945e-06 7.6332e-03 1.2919e-02 0:00:03 1482
519 2.5437e-03 2.3477e-03 9.4694e-04 3.6525e-03 7.1383e-06 7.4826e-03 1.2533e-02 0:00:03 1481
520 2.4782e-03 2.3298e-03 9.6184e-04 3.6710e-03 7.0308e-06 7.4152e-03 1.2405e-02 0:00:02 1480
521 2.3590e-03 2.3034e-03 9.5481e-04 3.7016e-03 6.8087e-06 7.3467e-03 1.2349e-02 0:00:02 1479
522 2.2304e-03 2.3072e-03 9.4054e-04 3.7416e-03 6.6536e-06 7.3373e-03 1.2412e-02 0:00:01 1478
523 2.2669e-03 2.2932e-03 9.3022e-04 3.7334e-03 6.6802e-06 7.4063e-03 1.2612e-02 0:04:57 1477
524 2.2232e-03 2.3270e-03 9.3539e-04 3.7548e-03 6.7993e-06 7.3464e-03 1.2398e-02 0:03:57 1476
525 2.3432e-03 2.3054e-03 9.3406e-04 3.7538e-03 6.9048e-06 7.2838e-03 1.2204e-02 0:03:10 1475
526 2.4066e-03 2.2913e-03 9.3465e-04 3.7721e-03 6.9471e-06 7.1404e-03 1.1912e-02 0:02:32 1474
527 2.4067e-03 2.2618e-03 9.3505e-04 3.7819e-03 6.9046e-06 7.0778e-03 1.1709e-02 0:02:01 1473
528 2.4085e-03 2.2611e-03 9.2647e-04 3.7473e-03 6.8132e-06 7.1193e-03 1.1870e-02 0:01:37 1472

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
529 2.4276e-03 2.2811e-03 9.1948e-04 3.7044e-03 6.8120e-06 7.2547e-03 1.2151e-02 0:01:17 1471
530 2.4638e-03 2.3094e-03 9.1937e-04 3.6491e-03 6.8259e-06 7.3239e-03 1.2189e-02 0:01:02 1470
531 2.4751e-03 2.3232e-03 9.2400e-04 3.5987e-03 6.8929e-06 7.2415e-03 1.1887e-02 0:00:49 1469
532 2.4571e-03 2.3237e-03 9.3337e-04 3.5686e-03 6.8397e-06 7.1482e-03 1.1695e-02 0:00:40 1468
533 2.3808e-03 2.2930e-03 9.3744e-04 3.5570e-03 6.6628e-06 7.0936e-03 1.1594e-02 0:00:32 1467
534 2.2636e-03 2.2592e-03 9.2464e-04 3.5515e-03 6.4516e-06 6.9854e-03 1.1511e-02 0:00:25 1466

535 2.1721e-03 2.2387e-03 9.1117e-04 3.5460e-03 6.3357e-06 6.9426e-03 1.1373e-02 0:00:20 1465
536 2.1614e-03 2.2378e-03 9.0987e-04 3.5296e-03 6.3702e-06 6.9139e-03 1.1288e-02 0:00:16 1464
537 2.1900e-03 2.2298e-03 9.1287e-04 3.5145e-03 6.4598e-06 6.8189e-03 1.1045e-02 0:00:13 1463
538 2.2362e-03 2.2038e-03 9.1627e-04 3.5210e-03 6.4589e-06 6.6563e-03 1.0901e-02 0:00:10 1462
539 2.2768e-03 2.1639e-03 9.0782e-04 3.5141e-03 6.4305e-06 6.4964e-03 1.0574e-02 0:00:08 1461

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
540 2.2475e-03 2.1192e-03 8.9652e-04 3.4995e-03 6.3724e-06 6.4632e-03 1.0443e-02 0:00:07 1460
541 2.2186e-03 2.1073e-03 8.7523e-04 3.4504e-03 6.2507e-06 6.5121e-03 1.0567e-02 0:00:05 1459
542 2.1996e-03 2.1151e-03 8.5916e-04 3.3750e-03 6.1733e-06 6.6261e-03 1.0735e-02 0:00:04 1458
543 2.2230e-03 2.1183e-03 8.5366e-04 3.3115e-03 6.1414e-06 6.6047e-03 1.0672e-02 0:00:03 1457
544 2.2474e-03 2.1149e-03 8.5728e-04 3.2591e-03 6.2135e-06 6.4919e-03 1.0386e-02 0:04:54 1456
545 2.2144e-03 2.1018e-03 8.6487e-04 3.2156e-03 6.1585e-06 6.4504e-03 1.0315e-02 0:03:55 1455
546 2.1137e-03 2.0651e-03 8.6202e-04 3.1946e-03 5.9260e-06 6.3500e-03 1.0199e-02 0:03:08 1454
547 1.9989e-03 2.0330e-03 8.4461e-04 3.1723e-03 5.7302e-06 6.2337e-03 1.0030e-02 0:02:30 1453
548 1.9416e-03 2.0142e-03 8.2979e-04 3.1411e-03 5.6276e-06 6.2133e-03 1.0010e-02 0:02:00 1452
549 1.9141e-03 2.0063e-03 8.3530e-04 3.1122e-03 5.6711e-06 6.1998e-03 9.9488e-03 0:01:36 1451
550 1.9511e-03 1.9953e-03 8.3773e-04 3.0894e-03 5.7216e-06 6.0917e-03 9.7351e-03 0:01:17 1450

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
551 1.9866e-03 1.9612e-03 8.3991e-04 3.0937e-03 5.6990e-06 5.9341e-03 9.5413e-03 0:01:01 1449
552 2.0026e-03 1.9161e-03 8.3100e-04 3.0872e-03 5.6428e-06 5.8055e-03 9.2699e-03 0:00:49 1448
553 1.9798e-03 1.8672e-03 8.1317e-04 3.0606e-03 5.5478e-06 5.7869e-03 9.2063e-03 0:00:39 1447
554 1.9480e-03 1.8524e-03 7.8696e-04 3.0057e-03 5.4045e-06 5.8948e-03 9.4598e-03 0:00:31 1446
555 1.9663e-03 1.8474e-03 7.6791e-04 2.9454e-03 5.3354e-06 5.9635e-03 9.6534e-03 0:00:25 1445
556 1.9829e-03 1.8487e-03 7.6267e-04 2.8876e-03 5.4121e-06 5.8796e-03 9.4653e-03 0:00:20 1444
557 1.9834e-03 1.8419e-03 7.6767e-04 2.8473e-03 5.4935e-06 5.7779e-03 9.2095e-03 0:00:16 1443
558 1.9510e-03 1.8143e-03 7.7550e-04 2.8197e-03 5.3917e-06 5.6991e-03 9.0626e-03 0:00:13 1442

559 1.8773e-03 1.7868e-03 7.7125e-04 2.8102e-03 5.2345e-06 5.6316e-03 8.9916e-03 0:00:10 1441
560 1.7749e-03 1.7740e-03 7.5413e-04 2.7996e-03 5.0982e-06 5.5848e-03 8.9805e-03 0:00:08 1440
561 1.7175e-03 1.7697e-03 7.4520e-04 2.7774e-03 5.0679e-06 5.6518e-03 9.1346e-03 0:00:07 1439

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
562 1.6799e-03 1.7817e-03 7.5447e-04 2.7658e-03 5.1168e-06 5.6725e-03 9.1492e-03 0:00:05 1438
563 1.7802e-03 1.7568e-03 7.5158e-04 2.7514e-03 5.1387e-06 5.5865e-03 8.9862e-03 0:00:04 1437
564 1.8108e-03 1.7376e-03 7.5189e-04 2.7600e-03 5.1414e-06 5.4668e-03 8.8022e-03 0:00:03 1436
565 1.8246e-03 1.7024e-03 7.4627e-04 2.7620e-03 5.0781e-06 5.4257e-03 8.6484e-03 0:00:03 1435
566 1.8143e-03 1.6755e-03 7.3157e-04 2.7412e-03 5.0217e-06 5.4714e-03 8.7842e-03 0:00:02 1434
567 1.8177e-03 1.6717e-03 7.1218e-04 2.6940e-03 4.9633e-06 5.5768e-03 9.0318e-03 0:00:02 1433
568 1.8570e-03 1.6720e-03 7.0089e-04 2.6535e-03 4.9096e-06 5.6071e-03 9.1414e-03 0:00:01 1432
569 1.8747e-03 1.6770e-03 7.0366e-04 2.6152e-03 5.0238e-06 5.4873e-03 8.9066e-03 0:04:47 1431
570 1.8636e-03 1.6779e-03 7.1363e-04 2.5985e-03 5.0867e-06 5.3434e-03 8.6268e-03 0:03:50 1430
571 1.8315e-03 1.6539e-03 7.1896e-04 2.5996e-03 5.0269e-06 5.2338e-03 8.3940e-03 0:03:04 1429
572 1.7585e-03 1.6259e-03 7.1068e-04 2.6095e-03 4.9058e-06 5.1931e-03 8.3628e-03 0:02:27 1428

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
573 1.6807e-03 1.6231e-03 6.9233e-04 2.6163e-03 4.8399e-06 5.2304e-03 8.4605e-03 0:01:57 1427
574 1.6080e-03 1.6447e-03 6.9251e-04 2.6314e-03 4.8352e-06 5.2889e-03 8.6224e-03 0:01:34 1426
575 1.6789e-03 1.6375e-03 6.9041e-04 2.6130e-03 4.9250e-06 5.3315e-03 8.7303e-03 0:01:15 1425
576 1.7297e-03 1.6389e-03 6.9829e-04 2.6296e-03 4.9932e-06 5.2604e-03 8.5799e-03 0:01:00 1424
577 1.7730e-03 1.6259e-03 6.9594e-04 2.6475e-03 5.0014e-06 5.1873e-03 8.4535e-03 0:00:48 1423
578 1.7818e-03 1.6062e-03 6.9401e-04 2.6437e-03 4.9642e-06 5.2239e-03 8.3997e-03 0:00:38 1422
579 1.7698e-03 1.6037e-03 6.8471e-04 2.6278e-03 4.8716e-06 5.2851e-03 8.5381e-03 0:00:31 1421
580 1.7875e-03 1.6141e-03 6.7842e-04 2.5952e-03 4.8646e-06 5.3562e-03 8.6710e-03 0:00:24 1420
581 1.8328e-03 1.6217e-03 6.7563e-04 2.5536e-03 4.8407e-06 5.3167e-03 8.5473e-03 0:00:20 1419
582 1.8463e-03 1.6353e-03 6.7850e-04 2.5176e-03 4.8761e-06 5.2135e-03 8.3784e-03 0:00:16 1418

583 1.8280e-03 1.6298e-03 6.8764e-04 2.5078e-03 4.8986e-06 5.0943e-03 8.2373e-03 0:00:13 1417

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
584 1.7820e-03 1.6101e-03 6.8918e-04 2.5140e-03 4.8564e-06 5.0319e-03 8.0505e-03 0:00:10 1416
585 1.7140e-03 1.5851e-03 6.7644e-04 2.5210e-03 4.7443e-06 5.0029e-03 8.0158e-03 0:00:08 1415
586 1.6439e-03 1.5767e-03 6.6414e-04 2.5263e-03 4.7166e-06 4.9958e-03 7.9756e-03 0:00:06 1414
587 1.6231e-03 1.5760e-03 6.6394e-04 2.5229e-03 4.7293e-06 4.9861e-03 7.9693e-03 0:00:05 1413
588 1.6534e-03 1.5778e-03 6.6623e-04 2.5216e-03 4.7889e-06 4.9233e-03 7.9040e-03 0:00:04 1412
589 1.6920e-03 1.5712e-03 6.7202e-04 2.5370e-03 4.7868e-06 4.8588e-03 7.8323e-03 0:04:45 1411
590 1.7137e-03 1.5480e-03 6.6962e-04 2.5447e-03 4.7579e-06 4.8022e-03 7.7049e-03 0:03:48 1410
591 1.7098e-03 1.5334e-03 6.6164e-04 2.5313e-03 4.7094e-06 4.7920e-03 7.5764e-03 0:03:02 1409
592 1.6876e-03 1.5427e-03 6.4877e-04 2.4960e-03 4.6500e-06 4.8211e-03 7.6307e-03 0:02:26 1408
593 1.7010e-03 1.5560e-03 6.4716e-04 2.4553e-03 4.6463e-06 4.8377e-03 7.6364e-03 0:01:57 1407
594 1.7403e-03 1.5631e-03 6.4548e-04 2.4130e-03 4.6151e-06 4.7841e-03 7.5051e-03 0:01:33 1406

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
595 1.7324e-03 1.5638e-03 6.4805e-04 2.3734e-03 4.6119e-06 4.7214e-03 7.3923e-03 0:01:15 1405
596 1.6971e-03 1.5468e-03 6.5071e-04 2.3459e-03 4.5615e-06 4.6540e-03 7.2718e-03 0:01:00 1404
597 1.6409e-03 1.5229e-03 6.4542e-04 2.3341e-03 4.4254e-06 4.6498e-03 7.1993e-03 0:00:48 1403
598 1.5784e-03 1.4981e-03 6.3186e-04 2.3196e-03 4.4329e-06 4.6030e-03 7.1712e-03 0:00:38 1402
599 1.5154e-03 1.4776e-03 6.2726e-04 2.3064e-03 4.3949e-06 4.5777e-03 7.1152e-03 0:00:30 1401
600 1.5079e-03 1.4748e-03 6.2828e-04 2.2884e-03 4.4200e-06 4.4917e-03 6.9750e-03 0:00:24 1400
601 1.5398e-03 1.4628e-03 6.3656e-04 2.2854e-03 4.3756e-06 4.3697e-03 6.8658e-03 0:00:19 1399
602 1.5570e-03 1.4394e-03 6.3290e-04 2.2846e-03 4.3062e-06 4.2605e-03 6.7190e-03 0:00:16 1398
603 1.5536e-03 1.4032e-03 6.2394e-04 2.2723e-03 4.2476e-06 4.1952e-03 6.5169e-03 0:00:12 1397
604 1.5328e-03 1.3827e-03 6.0665e-04 2.2453e-03 4.1591e-06 4.1788e-03 6.4352e-03 0:00:10 1396
605 1.4844e-03 1.3839e-03 5.8677e-04 2.1955e-03 4.0854e-06 4.1966e-03 6.5049e-03 0:00:08 1395

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

606 1.4847e-03 1.3851e-03 5.8062e-04 2.1435e-03 4.0293e-06 4.1871e-03 6.4621e-03 0:00:06 1394
607 1.5071e-03 1.3793e-03 5.8011e-04 2.0899e-03 3.9861e-06 4.1084e-03 6.3272e-03 0:00:05 1393
608 1.4973e-03 1.3648e-03 5.7896e-04 2.0496e-03 3.9553e-06 4.0241e-03 6.1614e-03 0:00:04 1392
609 1.4503e-03 1.3342e-03 5.7750e-04 2.0183e-03 3.8794e-06 3.9800e-03 6.0511e-03 0:00:03 1391
610 1.3864e-03 1.3060e-03 5.6651e-04 1.9920e-03 3.7694e-06 3.9358e-03 6.0134e-03 0:04:41 1390
611 1.3250e-03 1.2871e-03 5.5663e-04 1.9640e-03 3.7668e-06 3.8972e-03 5.9828e-03 0:03:44 1389
612 1.2824e-03 1.2712e-03 5.5411e-04 1.9373e-03 3.7578e-06 3.8626e-03 5.8812e-03 0:02:59 1388
613 1.2987e-03 1.2640e-03 5.5660e-04 1.9135e-03 3.7540e-06 3.7736e-03 5.7744e-03 0:02:23 1387
614 1.3192e-03 1.2492e-03 5.6047e-04 1.9079e-03 3.6854e-06 3.6592e-03 5.6294e-03 0:01:55 1386
615 1.3299e-03 1.2154e-03 5.5315e-04 1.9008e-03 3.5911e-06 3.5848e-03 5.5160e-03 0:01:32 1385
616 1.3054e-03 1.1760e-03 5.4239e-04 1.8777e-03 3.5145e-06 3.5570e-03 5.4068e-03 0:01:13 1384

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
617 1.2736e-03 1.1538e-03 5.1886e-04 1.8422e-03 3.4089e-06 3.5588e-03 5.4387e-03 0:00:59 1383
618 1.2461e-03 1.1477e-03 4.9930e-04 1.7973e-03 3.3371e-06 3.5778e-03 5.4937e-03 0:00:47 1382
619 1.2597e-03 1.1357e-03 4.9302e-04 1.7498e-03 3.2998e-06 3.5272e-03 5.4040e-03 0:00:37 1381
620 1.2717e-03 1.1249e-03 4.9233e-04 1.7065e-03 3.2952e-06 3.4177e-03 5.2039e-03 0:00:30 1380
621 1.2471e-03 1.1066e-03 4.9302e-04 1.6730e-03 3.2307e-06 3.2904e-03 4.9906e-03 0:00:24 1379
622 1.1981e-03 1.0788e-03 4.8627e-04 1.6513e-03 3.1428e-06 3.2399e-03 4.8880e-03 0:00:19 1378
623 1.1313e-03 1.0602e-03 4.7520e-04 1.6275e-03 3.1270e-06 3.2145e-03 4.8586e-03 0:00:15 1377
624 1.0744e-03 1.0496e-03 4.6563e-04 1.6068e-03 3.1334e-06 3.1963e-03 4.8556e-03 0:00:12 1376
625 1.0641e-03 1.0481e-03 4.6628e-04 1.5873e-03 3.1508e-06 3.1963e-03 4.8576e-03 0:00:10 1375
626 1.0998e-03 1.0451e-03 4.6993e-04 1.5744e-03 3.1196e-06 3.1344e-03 4.7673e-03 0:00:08 1374
627 1.1197e-03 1.0267e-03 4.6852e-04 1.5723e-03 3.0447e-06 3.0863e-03 4.7116e-03 0:00:06 1373

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
628 1.1158e-03 9.9697e-04 4.6163e-04 1.5625e-03 2.9957e-06 3.0866e-03 4.6866e-03 0:00:05 1372
629 1.0988e-03 9.7152e-04 4.4745e-04 1.5414e-03 2.9199e-06 3.1124e-03 4.7280e-03 0:00:04 1371

630 1.0797e-03 9.6137e-04 4.3001e-04 1.5044e-03 2.8562e-06 3.1315e-03 4.8142e-03 0:00:03 1370
631 1.0890e-03 9.5475e-04 4.2230e-04 1.4705e-03 2.7990e-06 3.1211e-03 4.7506e-03 0:00:03 1369
632 1.1180e-03 9.4547e-04 4.1714e-04 1.4347e-03 2.7909e-06 3.0068e-03 4.5974e-03 0:00:02 1368
633 1.1082e-03 9.3357e-04 4.1934e-04 1.4077e-03 2.7675e-06 2.8494e-03 4.3762e-03 0:00:02 1367
634 1.0647e-03 9.1422e-04 4.1720e-04 1.3950e-03 2.7259e-06 2.7368e-03 4.1895e-03 0:04:35 1366
635 1.0168e-03 8.8980e-04 4.1023e-04 1.3826e-03 2.6755e-06 2.6887e-03 4.0803e-03 0:03:39 1365
636 9.6867e-04 8.8065e-04 3.9775e-04 1.3721e-03 2.6678e-06 2.6876e-03 4.1072e-03 0:02:55 1364
637 9.3654e-04 8.7338e-04 3.9155e-04 1.3610e-03 2.6846e-06 2.6922e-03 4.1235e-03 0:02:20 1363
638 9.4353e-04 8.7532e-04 3.9030e-04 1.3500e-03 2.6997e-06 2.6764e-03 4.1030e-03 0:01:52 1362

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
639 9.7126e-04 8.7275e-04 3.9346e-04 1.3506e-03 2.6643e-06 2.6536e-03 4.1031e-03 0:01:30 1361
640 9.8245e-04 8.5627e-04 3.9305e-04 1.3484e-03 2.6335e-06 2.6690e-03 4.1176e-03 0:01:12 1360
641 9.7398e-04 8.3917e-04 3.8672e-04 1.3394e-03 2.5985e-06 2.7101e-03 4.1562e-03 0:00:57 1359
642 9.6807e-04 8.3716e-04 3.7550e-04 1.3225e-03 2.5554e-06 2.7407e-03 4.2032e-03 0:00:46 1358
643 9.6936e-04 8.3715e-04 3.6762e-04 1.2962e-03 2.5420e-06 2.7308e-03 4.2180e-03 0:00:37 1357
644 9.9626e-04 8.3763e-04 3.6505e-04 1.2665e-03 2.5474e-06 2.6635e-03 4.0556e-03 0:00:29 1356
645 1.0214e-03 8.3342e-04 3.6689e-04 1.2416e-03 2.5076e-06 2.5429e-03 3.8441e-03 0:00:23 1355
646 9.9757e-04 8.1777e-04 3.6697e-04 1.2217e-03 2.4759e-06 2.4107e-03 3.6796e-03 0:00:19 1354
647 9.4617e-04 7.9779e-04 3.6228e-04 1.2126e-03 2.3840e-06 2.3695e-03 3.6080e-03 0:00:15 1353
648 8.9935e-04 7.8131e-04 3.5089e-04 1.2025e-03 2.3850e-06 2.3883e-03 3.6135e-03 0:00:12 1352
649 8.7061e-04 7.6821e-04 3.4186e-04 1.1942e-03 2.3948e-06 2.3954e-03 3.6510e-03 0:00:10 1351

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
650 8.5272e-04 7.6034e-04 3.4019e-04 1.1881e-03 2.3992e-06 2.3423e-03 3.5869e-03 0:00:08 1350
651 8.6770e-04 7.5783e-04 3.4212e-04 1.1871e-03 2.3646e-06 2.2846e-03 3.5211e-03 0:00:06 1349
652 8.8190e-04 7.4988e-04 3.4627e-04 1.1847e-03 2.3326e-06 2.2635e-03 3.5147e-03 0:00:05 1348
653 8.7301e-04 7.3389e-04 3.4245e-04 1.1800e-03 2.3202e-06 2.2731e-03 3.4956e-03 0:04:33 1347

654 8.6318e-04 7.2969e-04 3.3338e-04 1.1637e-03 2.2866e-06 2.2777e-03 3.4660e-03 0:03:38 1346
655 8.4893e-04 7.3408e-04 3.2205e-04 1.1392e-03 2.2568e-06 2.2663e-03 3.4617e-03 0:02:55 1345
656 8.5283e-04 7.3781e-04 3.1960e-04 1.1165e-03 2.2630e-06 2.2231e-03 3.3871e-03 0:02:20 1344
657 8.7314e-04 7.3900e-04 3.1802e-04 1.0939e-03 2.2570e-06 2.1346e-03 3.1892e-03 0:01:52 1343
658 8.6782e-04 7.2914e-04 3.1829e-04 1.0673e-03 2.2162e-06 2.0476e-03 3.0278e-03 0:01:29 1342
659 8.3407e-04 7.0700e-04 3.1441e-04 1.0467e-03 2.1138e-06 2.0311e-03 3.0116e-03 0:01:11 1341
660 7.9038e-04 6.8734e-04 3.0801e-04 1.0308e-03 2.0585e-06 2.0522e-03 3.0451e-03 0:00:57 1340

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
661 7.5872e-04 6.7334e-04 3.0012e-04 1.0160e-03 2.0916e-06 2.0819e-03 3.1277e-03 0:00:46 1339
662 7.4193e-04 6.6091e-04 2.9828e-04 1.0058e-03 2.0934e-06 2.0421e-03 3.0949e-03 0:00:36 1338
663 7.4751e-04 6.5707e-04 2.9962e-04 9.9768e-04 2.0732e-06 1.9595e-03 2.9667e-03 0:00:29 1337
664 7.6132e-04 6.4791e-04 3.0075e-04 9.9153e-04 2.0199e-06 1.8775e-03 2.8534e-03 0:00:23 1336
665 7.4965e-04 6.3118e-04 2.9861e-04 9.8259e-04 1.9573e-06 1.8537e-03 2.8190e-03 0:00:19 1335
666 7.2609e-04 6.1532e-04 2.9044e-04 9.6892e-04 1.8977e-06 1.8450e-03 2.7854e-03 0:00:15 1334
667 7.0805e-04 6.0753e-04 2.7832e-04 9.4794e-04 1.8542e-06 1.8267e-03 2.7426e-03 0:00:12 1333
668 6.8832e-04 6.0783e-04 2.6746e-04 9.2235e-04 1.8315e-06 1.7818e-03 2.6829e-03 0:00:10 1332
669 6.9914e-04 6.0245e-04 2.6391e-04 8.9895e-04 1.8232e-06 1.7142e-03 2.5351e-03 0:00:08 1331
670 7.0328e-04 5.9295e-04 2.6251e-04 8.7366e-04 1.7997e-06 1.6118e-03 2.3385e-03 0:00:06 1330
671 6.7848e-04 5.7676e-04 2.5909e-04 8.4492e-04 1.7265e-06 1.5709e-03 2.2731e-03 0:00:05 1329

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
672 6.3622e-04 5.5849e-04 2.5330e-04 8.2570e-04 1.6357e-06 1.5812e-03 2.3049e-03 0:00:04 1328
673 6.0066e-04 5.4236e-04 2.4667e-04 8.0460e-04 1.6582e-06 1.5982e-03 2.3501e-03 0:00:03 1327
674 5.8491e-04 5.3338e-04 2.4311e-04 7.8838e-04 1.6711e-06 1.5858e-03 2.3736e-03 0:00:02 1326
675 5.8109e-04 5.2913e-04 2.4371e-04 7.7720e-04 1.6626e-06 1.5341e-03 2.2872e-03 0:00:02 1325
676 5.9813e-04 5.2351e-04 2.4532e-04 7.6701e-04 1.6251e-06 1.4664e-03 2.1844e-03 0:04:26 1324
677 5.9704e-04 5.0944e-04 2.4407e-04 7.5666e-04 1.5586e-06 1.4541e-03 2.1709e-03 0:03:33 1323

678 5.7496e-04 4.9002e-04 2.3717e-04 7.4590e-04 1.4829e-06 1.4541e-03 2.1598e-03 0:02:50 1322
679 5.5652e-04 4.7455e-04 2.2709e-04 7.2680e-04 1.4176e-06 1.4558e-03 2.1625e-03 0:02:16 1321
680 5.3671e-04 4.6745e-04 2.1645e-04 7.0607e-04 1.3794e-06 1.4252e-03 2.1245e-03 0:01:49 1320
681 5.3883e-04 4.5753e-04 2.1036e-04 6.8625e-04 1.3589e-06 1.3747e-03 2.0284e-03 0:01:27 1319
682 5.4497e-04 4.4790e-04 2.0737e-04 6.6572e-04 1.3503e-06 1.2717e-03 1.8469e-03 0:01:10 1318

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
683 5.3267e-04 4.3548e-04 2.0557e-04 6.4280e-04 1.3031e-06 1.1847e-03 1.7111e-03 0:00:56 1317
684 4.9467e-04 4.1789e-04 2.0035e-04 6.2381e-04 1.2280e-06 1.1384e-03 1.6435e-03 0:00:44 1316
685 4.5880e-04 4.0388e-04 1.9326e-04 6.0496e-04 1.2241e-06 1.1305e-03 1.6444e-03 0:00:36 1315
686 4.3714e-04 4.0057e-04 1.8719e-04 5.9055e-04 1.2342e-06 1.1333e-03 1.6857e-03 0:00:28 1314
687 4.3142e-04 3.9709e-04 1.8504e-04 5.8051e-04 1.2341e-06 1.1211e-03 1.6676e-03 0:00:23 1313
688 4.4427e-04 3.9626e-04 1.8550e-04 5.7098e-04 1.2209e-06 1.0982e-03 1.6194e-03 0:00:18 1312
689 4.5452e-04 3.8747e-04 1.8486e-04 5.6100e-04 1.1804e-06 1.1053e-03 1.6341e-03 0:00:15 1311
690 4.4678e-04 3.7187e-04 1.8101e-04 5.5292e-04 1.1245e-06 1.1280e-03 1.6634e-03 0:00:12 1310
691 4.2944e-04 3.5987e-04 1.7451e-04 5.3941e-04 1.0736e-06 1.1428e-03 1.6885e-03 0:00:09 1309
692 4.1719e-04 3.5302e-04 1.6734e-04 5.2347e-04 1.0441e-06 1.1350e-03 1.6990e-03 0:00:07 1308
693 4.1825e-04 3.4509e-04 1.6223e-04 5.0867e-04 1.0291e-06 1.1018e-03 1.6443e-03 0:00:06 1307

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
694 4.2808e-04 3.3760e-04 1.6066e-04 4.9348e-04 1.0264e-06 1.0250e-03 1.4938e-03 0:00:05 1306
695 4.2236e-04 3.2704e-04 1.6010e-04 4.7786e-04 9.9562e-07 9.3477e-04 1.3510e-03 0:04:25 1305
696 3.9397e-04 3.1331e-04 1.5622e-04 4.6333e-04 9.3175e-07 8.7044e-04 1.2645e-03 0:03:32 1304
697 3.6269e-04 2.9909e-04 1.4928e-04 4.5028e-04 9.0514e-07 8.3577e-04 1.2181e-03 0:02:49 1303
698 3.3845e-04 2.9265e-04 1.4197e-04 4.3777e-04 9.0247e-07 8.2545e-04 1.2241e-03 0:02:15 1302
699 3.3012e-04 2.8859e-04 1.3706e-04 4.3020e-04 9.0493e-07 8.2577e-04 1.2305e-03 0:01:48 1301
700 3.3476e-04 2.8745e-04 1.3555e-04 4.2382e-04 9.0449e-07 8.1093e-04 1.2071e-03 0:01:26 1300
701 3.4392e-04 2.8225e-04 1.3565e-04 4.1655e-04 8.8174e-07 8.1383e-04 1.2127e-03 0:01:09 1299

702 3.4040e-04 2.7306e-04 1.3355e-04 4.0993e-04 8.4623e-07 8.3724e-04 1.2440e-03 0:00:55 1298
703 3.3012e-04 2.6469e-04 1.2918e-04 4.0067e-04 8.1987e-07 8.5217e-04 1.2654e-03 0:00:44 1297
704 3.2308e-04 2.6209e-04 1.2534e-04 3.8817e-04 8.0917e-07 8.4610e-04 1.2628e-03 0:00:35 1296

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
705 3.2247e-04 2.6002e-04 1.2225e-04 3.7701e-04 8.0084e-07 8.1967e-04 1.2190e-03 0:00:28 1295
706 3.2931e-04 2.5730e-04 1.2012e-04 3.6664e-04 8.0368e-07 7.6274e-04 1.1060e-03 0:00:23 1294
707 3.2870e-04 2.5032e-04 1.1964e-04 3.5476e-04 7.7667e-07 6.8927e-04 9.6907e-04 0:00:18 1293
708 3.1134e-04 2.3905e-04 1.1720e-04 3.4386e-04 7.2106e-07 6.5020e-04 9.2387e-04 0:00:14 1292
709 2.8249e-04 2.2640e-04 1.1224e-04 3.3353e-04 6.8631e-07 6.4424e-04 9.2567e-04 0:00:12 1291
710 2.5953e-04 2.1723e-04 1.0671e-04 3.2401e-04 6.7584e-07 6.4336e-04 9.4871e-04 0:00:09 1290
711 2.5086e-04 2.1117e-04 1.0269e-04 3.1722e-04 6.7032e-07 6.3848e-04 9.5495e-04 0:00:07 1289
712 2.5159e-04 2.0848e-04 1.0121e-04 3.1312e-04 6.6890e-07 6.2031e-04 9.3150e-04 0:00:06 1288
713 2.5565e-04 2.0480e-04 1.0118e-04 3.0909e-04 6.5344e-07 5.9311e-04 8.9790e-04 0:00:05 1287
714 2.5282e-04 1.9912e-04 9.9698e-05 3.0332e-04 6.3193e-07 5.9528e-04 9.0104e-04 0:00:04 1286
715 2.4195e-04 1.9357e-04 9.5906e-05 2.9667e-04 6.1134e-07 5.9318e-04 8.9197e-04 0:00:03 1285

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
716 2.3349e-04 1.9183e-04 9.2085e-05 2.8798e-04 6.0209e-07 5.8244e-04 8.6526e-04 0:00:02 1284
717 2.2973e-04 1.9274e-04 8.9502e-05 2.7855e-04 5.9948e-07 5.5455e-04 8.1852e-04 0:04:19 1283
718 2.3342e-04 1.9110e-04 8.7264e-05 2.6990e-04 6.0110e-07 5.1550e-04 7.4572e-04 0:03:27 1282
719 2.3527e-04 1.8748e-04 8.6596e-05 2.6070e-04 5.8212e-07 4.7457e-04 6.5690e-04 0:02:45 1281
720 2.2575e-04 1.7967e-04 8.5070e-05 2.5048e-04 5.4549e-07 4.6619e-04 6.4667e-04 0:02:12 1280
721 2.0583e-04 1.7078e-04 8.1975e-05 2.4230e-04 5.1979e-07 4.7327e-04 6.7513e-04 0:01:46 1279
722 1.9137e-04 1.6317e-04 7.9362e-05 2.3414e-04 5.1077e-07 4.8409e-04 7.1557e-04 0:01:24 1278
723 1.8553e-04 1.5840e-04 7.7489e-05 2.2783e-04 5.0615e-07 4.8307e-04 7.3272e-04 0:01:07 1277
724 1.8650e-04 1.5514e-04 7.7382e-05 2.2491e-04 5.0300e-07 4.6842e-04 7.1295e-04 0:00:54 1276
725 1.9003e-04 1.5295e-04 7.7140e-05 2.2185e-04 4.8995e-07 4.4339e-04 6.7971e-04 0:00:43 1275

726 1.8727e-04 1.4781e-04 7.5812e-05 2.1708e-04 4.6762e-07 4.3007e-04 6.6228e-04 0:00:34 1274

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
727 1.7968e-04 1.4224e-04 7.2606e-05 2.1261e-04 4.4642e-07 4.1995e-04 6.3906e-04 0:00:28 1273
728 1.6810e-04 1.3915e-04 6.9432e-05 2.0636e-04 4.2786e-07 4.0708e-04 6.0643e-04 0:00:22 1272
729 1.6240e-04 1.3721e-04 6.6405e-05 1.9949e-04 4.1860e-07 3.8820e-04 5.7071e-04 0:00:18 1271
730 1.6395e-04 1.3462e-04 6.3673e-05 1.9287e-04 4.1623e-07 3.5957e-04 5.1809e-04 0:00:14 1270
731 1.6505e-04 1.3070e-04 6.2053e-05 1.8577e-04 4.0400e-07 3.2619e-04 4.5105e-04 0:00:11 1269
732 1.5862e-04 1.2492e-04 6.0748e-05 1.7742e-04 3.8015e-07 3.1052e-04 4.2839e-04 0:00:09 1268
733 1.4449e-04 1.1897e-04 5.8544e-05 1.7066e-04 3.6556e-07 3.1295e-04 4.4907e-04 0:00:07 1267
734 1.3379e-04 1.1435e-04 5.6621e-05 1.6397e-04 3.6292e-07 3.1884e-04 4.7342e-04 0:00:06 1266
735 1.2822e-04 1.1249e-04 5.5380e-05 1.5847e-04 3.6073e-07 3.2202e-04 4.9157e-04 0:00:05 1265
736 1.2972e-04 1.1123e-04 5.5290e-05 1.5611e-04 3.5668e-07 3.1721e-04 4.8357e-04 0:00:04 1264
737 1.3401e-04 1.1015e-04 5.5007e-05 1.5355e-04 3.4650e-07 3.0781e-04 4.6883e-04 0:00:03 1263

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
738 1.3437e-04 1.0651e-04 5.4019e-05 1.4962e-04 3.2832e-07 3.0924e-04 4.6952e-04 0:00:02 1262
739 1.2886e-04 1.0185e-04 5.2191e-05 1.4632e-04 3.0756e-07 3.0831e-04 4.6068e-04 0:00:02 1261
740 1.2073e-04 9.7690e-05 5.0142e-05 1.4215e-04 2.8933e-07 3.0383e-04 4.4644e-04 0:04:13 1260
741 1.1586e-04 9.4886e-05 4.8067e-05 1.3790e-04 2.7939e-07 2.9421e-04 4.3164e-04 0:03:23 1259
742 1.1654e-04 9.1601e-05 4.5962e-05 1.3420e-04 2.7536e-07 2.7692e-04 4.0291e-04 0:02:42 1258
743 1.1822e-04 8.8218e-05 4.5135e-05 1.2964e-04 2.6779e-07 2.4871e-04 3.5180e-04 0:02:09 1257
744 1.1375e-04 8.4287e-05 4.4042e-05 1.2362e-04 2.5334e-07 2.2342e-04 3.1403e-04 0:01:44 1256
745 1.0414e-04 8.0304e-05 4.2183e-05 1.1828e-04 2.4323e-07 2.1048e-04 3.0385e-04 0:01:23 1255
746 9.4627e-05 7.7456e-05 4.0289e-05 1.1314e-04 2.3982e-07 2.0822e-04 3.0763e-04 0:01:06 1254
747 8.9566e-05 7.6560e-05 3.8566e-05 1.0921e-04 2.3900e-07 2.1062e-04 3.1688e-04 0:00:53 1253
748 9.0086e-05 7.5761e-05 3.7664e-05 1.0697e-04 2.3800e-07 2.1321e-04 3.1935e-04 0:00:42 1252

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

749 9.3594e-05 7.5303e-05 3.7028e-05 1.0471e-04 2.3443e-07 2.1635e-04 3.2034e-04 0:00:34 1251
750 9.5560e-05 7.2861e-05 3.6428e-05 1.0151e-04 2.2213e-07 2.2278e-04 3.2720e-04 0:00:27 1250
751 9.3091e-05 6.9806e-05 3.5468e-05 9.8657e-05 2.0898e-07 2.2723e-04 3.3062e-04 0:00:22 1249
752 8.9177e-05 6.7026e-05 3.4550e-05 9.5310e-05 1.9848e-07 2.3007e-04 3.3490e-04 0:00:17 1248
753 8.7266e-05 6.5358e-05 3.3657e-05 9.2113e-05 1.9274e-07 2.2630e-04 3.3471e-04 0:00:14 1247
754 8.8197e-05 6.3041e-05 3.2979e-05 8.9567e-05 1.9046e-07 2.1596e-04 3.1638e-04 0:00:11 1246
755 8.8827e-05 6.0731e-05 3.2516e-05 8.6426e-05 1.8513e-07 1.9597e-04 2.8102e-04 0:00:09 1245
756 8.6406e-05 5.7823e-05 3.1946e-05 8.2233e-05 1.7452e-07 1.7450e-04 2.4738e-04 0:00:07 1244
757 7.9871e-05 5.4492e-05 3.0606e-05 7.8560e-05 1.6402e-07 1.5930e-04 2.2686e-04 0:00:06 1243
758 7.2370e-05 5.1661e-05 2.8788e-05 7.4530e-05 1.5677e-07 1.5264e-04 2.1952e-04 0:00:05 1242
759 6.8126e-05 4.9937e-05 2.6887e-05 7.1653e-05 1.5299e-07 1.5006e-04 2.1932e-04 0:00:04 1241

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
760 6.7104e-05 4.8469e-05 2.5460e-05 6.9655e-05 1.5026e-07 1.4897e-04 2.1967e-04 0:00:03 1240
761 6.8345e-05 4.7251e-05 2.4448e-05 6.8150e-05 1.4706e-07 1.4921e-04 2.1927e-04 0:04:10 1239
762 6.7944e-05 4.5619e-05 2.3812e-05 6.5880e-05 1.4060e-07 1.5165e-04 2.2273e-04 0:03:20 1238
763 6.5269e-05 4.3853e-05 2.3011e-05 6.3431e-05 1.3444e-07 1.5310e-04 2.2360e-04 0:02:40 1237
764 6.2054e-05 4.2681e-05 2.2280e-05 6.1028e-05 1.3075e-07 1.5219e-04 2.2204e-04 0:02:08 1236
765 6.1137e-05 4.2163e-05 2.1718e-05 5.8571e-05 1.2923e-07 1.4749e-04 2.1408e-04 0:01:42 1235
766 6.0890e-05 4.1435e-05 2.1185e-05 5.6126e-05 1.2868e-07 1.3823e-04 1.9741e-04 0:01:22 1234
767 6.0926e-05 4.0314e-05 2.0802e-05 5.3898e-05 1.2477e-07 1.2338e-04 1.6945e-04 0:01:05 1233
768 5.8879e-05 3.8342e-05 2.0535e-05 5.1136e-05 1.1632e-07 1.0877e-04 1.4473e-04 0:00:52 1232
769 5.4288e-05 3.5662e-05 1.9786e-05 4.8709e-05 1.0676e-07 1.0179e-04 1.3997e-04 0:00:42 1231
770 4.9345e-05 3.3115e-05 1.8601e-05 4.6192e-05 1.0017e-07 1.0266e-04 1.4998e-04 0:00:33 1230

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
771 4.5432e-05 3.0856e-05 1.7426e-05 4.4170e-05 9.5569e-08 1.0579e-04 1.6246e-04 0:00:27 1229
772 4.3907e-05 2.9014e-05 1.6772e-05 4.2963e-05 9.2080e-08 1.0591e-04 1.6629e-04 0:00:21 1228

773 4.3860e-05 2.7900e-05 1.6332e-05 4.2116e-05 8.9134e-08 1.0235e-04 1.6197e-04 0:00:17 1227
774 4.2722e-05 2.6911e-05 1.5967e-05 4.1043e-05 8.6904e-08 9.9928e-05 1.5940e-04 0:00:14 1226
775 4.0547e-05 2.6198e-05 1.5340e-05 3.9827e-05 8.4788e-08 9.6966e-05 1.5368e-04 0:00:11 1225
776 3.8205e-05 2.6173e-05 1.4563e-05 3.8525e-05 8.2805e-08 9.1922e-05 1.4249e-04 0:00:09 1224
777 3.6876e-05 2.6385e-05 1.3971e-05 3.6702e-05 8.2067e-08 8.5809e-05 1.2758e-04 0:00:07 1223
778 3.6493e-05 2.6318e-05 1.3498e-05 3.4739e-05 8.1414e-08 7.7500e-05 1.1114e-04 0:00:06 1222
779 3.6360e-05 2.5886e-05 1.2962e-05 3.2914e-05 7.9295e-08 6.9811e-05 9.8328e-05 0:00:04 1221
780 3.5071e-05 2.4862e-05 1.2673e-05 3.0971e-05 7.5188e-08 6.7119e-05 9.5998e-05 0:00:04 1220
781 3.2641e-05 2.3469e-05 1.2422e-05 2.9225e-05 7.1290e-08 6.9787e-05 1.0583e-04 0:00:03 1219

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
782 3.0355e-05 2.2007e-05 1.2219e-05 2.7762e-05 6.8170e-08 7.3190e-05 1.1728e-04 0:00:02 1218
783 2.8476e-05 2.0572e-05 1.2052e-05 2.6662e-05 6.5847e-08 7.5180e-05 1.2398e-04 0:00:02 1217
784 2.7357e-05 1.9307e-05 1.1947e-05 2.6006e-05 6.3510e-08 7.4779e-05 1.2457e-04 0:04:05 1216
785 2.7267e-05 1.8551e-05 1.1739e-05 2.5652e-05 6.1522e-08 7.1958e-05 1.2119e-04 0:03:16 1215
786 2.6911e-05 1.7835e-05 1.1409e-05 2.5268e-05 5.9260e-08 6.9113e-05 1.1698e-04 0:02:36 1214
787 2.5885e-05 1.7266e-05 1.0881e-05 2.4848e-05 5.6716e-08 6.5107e-05 1.0970e-04 0:02:05 1213
788 2.4423e-05 1.6802e-05 1.0217e-05 2.4394e-05 5.4252e-08 6.0515e-05 9.9633e-05 0:01:40 1212
789 2.3536e-05 1.6568e-05 9.6101e-06 2.3625e-05 5.1939e-08 5.5590e-05 8.8050e-05 0:01:20 1211
790 2.3072e-05 1.6158e-05 9.0469e-06 2.2754e-05 4.9967e-08 5.0401e-05 7.6369e-05 0:01:04 1210
791 2.3125e-05 1.5682e-05 8.5908e-06 2.1880e-05 4.8203e-08 4.5663e-05 6.6958e-05 0:00:51 1209
792 2.2517e-05 1.4960e-05 8.3694e-06 2.0773e-05 4.6271e-08 4.2282e-05 6.2150e-05 0:00:41 1208

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
793 2.1200e-05 1.4218e-05 8.1858e-06 1.9713e-05 4.5274e-08 4.1460e-05 6.3074e-05 0:00:33 1207
794 1.9656e-05 1.3682e-05 8.0469e-06 1.8846e-05 4.4809e-08 4.2177e-05 6.7077e-05 0:00:26 1206
795 1.8855e-05 1.3415e-05 7.9212e-06 1.8114e-05 4.4497e-08 4.3109e-05 7.0646e-05 0:00:21 1205
796 1.8871e-05 1.3212e-05 7.8076e-06 1.7715e-05 4.3730e-08 4.4148e-05 7.2652e-05 0:00:17 1204

797 1.9374e-05 1.3152e-05 7.6606e-06 1.7520e-05 4.2844e-08 4.5110e-05 7.3812e-05 0:00:13 1203
798 1.9863e-05 1.2823e-05 7.5807e-06 1.7292e-05 4.0809e-08 4.6317e-05 7.4203e-05 0:00:11 1202
799 1.9839e-05 1.2355e-05 7.5057e-06 1.7208e-05 3.8464e-08 4.6626e-05 7.2629e-05 0:00:09 1201
800 1.9361e-05 1.1852e-05 7.3526e-06 1.7001e-05 3.5767e-08 4.6182e-05 6.8917e-05 0:00:07 1200
801 1.8987e-05 1.1511e-05 7.1102e-06 1.6770e-05 3.3381e-08 4.4956e-05 6.4753e-05 0:00:05 1199
802 1.8942e-05 1.1086e-05 6.8510e-06 1.6540e-05 3.1458e-08 4.3012e-05 6.0809e-05 0:00:04 1198
803 1.9857e-05 1.0549e-05 6.5655e-06 1.6183e-05 3.0202e-08 4.0385e-05 5.6316e-05 0:00:03 1197

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
804 1.8437e-05 1.0157e-05 6.4060e-06 1.5564e-05 2.9163e-08 3.7916e-05 5.2132e-05 0:00:03 1196
805 1.8716e-05 9.5779e-06 6.1854e-06 1.4964e-05 2.8692e-08 3.5932e-05 4.9676e-05 0:04:01 1195
806 1.7128e-05 9.3953e-06 5.9836e-06 1.4361e-05 2.8653e-08 3.5025e-05 4.9580e-05 0:03:13 1194
807 1.7003e-05 9.3649e-06 5.7171e-06 1.3904e-05 2.8799e-08 3.5262e-05 5.0605e-05 0:02:34 1193
808 1.7273e-05 9.4507e-06 5.5033e-06 1.3619e-05 2.9008e-08 3.6437e-05 5.2420e-05 0:02:03 1192
809 1.7695e-05 9.5686e-06 5.3614e-06 1.3453e-05 2.8831e-08 3.7726e-05 5.3662e-05 0:01:38 1191
810 1.8054e-05 9.4958e-06 5.3093e-06 1.3175e-05 2.7895e-08 3.8987e-05 5.4845e-05 0:01:19 1190
811 1.8154e-05 9.2700e-06 5.2443e-06 1.2899e-05 2.6754e-08 4.0080e-05 5.5608e-05 0:01:03 1189
812 1.7867e-05 9.0246e-06 5.1997e-06 1.2581e-05 2.5824e-08 4.1076e-05 5.7300e-05 0:00:50 1188
813 1.7719e-05 8.7573e-06 5.1698e-06 1.2224e-05 2.5087e-08 4.1599e-05 5.8681e-05 0:00:40 1187
814 1.7636e-05 8.4236e-06 5.1454e-06 1.1926e-05 2.4650e-08 4.1182e-05 5.7983e-05 0:00:32 1186

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
815 1.7575e-05 8.1269e-06 5.0969e-06 1.1603e-05 2.3927e-08 3.9531e-05 5.5055e-05 0:00:26 1185
816 1.8059e-05 7.6973e-06 4.9995e-06 1.1170e-05 2.3064e-08 3.6805e-05 5.0535e-05 0:00:21 1184
817 1.6410e-05 7.2870e-06 4.8463e-06 1.0601e-05 2.1909e-08 3.4284e-05 4.5987e-05 0:00:16 1183
818 1.6469e-05 6.7445e-06 4.6310e-06 1.0108e-05 2.0712e-08 3.2087e-05 4.2568e-05 0:00:13 1182
819 1.5124e-05 6.3014e-06 4.3422e-06 9.6627e-06 1.9674e-08 3.1006e-05 4.1042e-05 0:00:10 1181
820 1.5419e-05 5.9178e-06 4.0735e-06 9.4176e-06 1.8997e-08 3.0290e-05 4.0880e-05 0:00:08 1180

821 1.4617e-05 5.6756e-06 3.8558e-06 9.2078e-06 1.8592e-08 3.0121e-05 4.1129e-05 0:00:07 1179
822 1.4891e-05 5.4196e-06 3.7098e-06 9.0058e-06 1.8271e-08 2.9760e-05 4.1076e-05 0:00:05 1178
823 1.3864e-05 5.4043e-06 3.5661e-06 8.8083e-06 1.8125e-08 2.9368e-05 4.0687e-05 0:00:04 1177
824 1.3984e-05 5.3420e-06 3.4271e-06 8.5863e-06 1.7942e-08 2.8580e-05 3.9503e-05 0:00:03 1176
825 1.2949e-05 5.4567e-06 3.3123e-06 8.2349e-06 1.8038e-08 2.7516e-05 3.7678e-05 0:00:03 1175

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
826 1.3249e-05 5.3553e-06 3.2417e-06 7.8887e-06 1.7792e-08 2.6063e-05 3.5500e-05 0:03:57 1174
827 1.2282e-05 5.3711e-06 3.2321e-06 7.4913e-06 1.7637e-08 2.4648e-05 3.3417e-05 0:03:09 1173
828 1.2362e-05 5.1880e-06 3.2617e-06 7.2528e-06 1.7040e-08 2.3316e-05 3.2339e-05 0:02:31 1172
829 1.1777e-05 4.9782e-06 3.2884e-06 7.0198e-06 1.6455e-08 2.2691e-05 3.3029e-05 0:02:01 1171
830 1.1186e-05 4.7020e-06 3.3067e-06 6.8667e-06 1.5850e-08 2.2718e-05 3.4607e-05 0:01:37 1170
831 1.0731e-05 4.3845e-06 3.3178e-06 6.7737e-06 1.5198e-08 2.2898e-05 3.5972e-05 0:01:17 1169
832 1.0365e-05 4.1242e-06 3.2999e-06 6.7076e-06 1.4633e-08 2.2944e-05 3.6747e-05 0:01:02 1168
833 1.0031e-05 3.9920e-06 3.2486e-06 6.6023e-06 1.4250e-08 2.2806e-05 3.7069e-05 0:00:49 1167
834 9.6441e-06 3.9710e-06 3.1709e-06 6.4569e-06 1.4006e-08 2.2507e-05 3.6952e-05 0:00:39 1166
835 9.2429e-06 3.9964e-06 3.0700e-06 6.2674e-06 1.3897e-08 2.1985e-05 3.6259e-05 0:00:32 1165
836 8.8295e-06 4.0514e-06 2.9578e-06 6.0361e-06 1.3877e-08 2.1238e-05 3.5021e-05 0:00:25 1164

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
837 8.4283e-06 4.1062e-06 2.8474e-06 5.7265e-06 1.3879e-08 2.0382e-05 3.3571e-05 0:00:20 1163
838 8.0440e-06 4.1460e-06 2.7700e-06 5.3848e-06 1.3804e-08 1.9674e-05 3.2354e-05 0:00:16 1162
839 7.7244e-06 4.1490e-06 2.7235e-06 5.0953e-06 1.3695e-08 1.9166e-05 3.1457e-05 0:00:13 1161
840 7.4872e-06 4.0878e-06 2.7058e-06 4.8273e-06 1.3416e-08 1.8794e-05 3.0967e-05 0:00:10 1160
841 7.2351e-06 3.9698e-06 2.6878e-06 4.5864e-06 1.2989e-08 1.8509e-05 3.0772e-05 0:00:08 1159
842 6.9694e-06 3.7975e-06 2.6664e-06 4.3803e-06 1.2520e-08 1.8241e-05 3.0700e-05 0:00:07 1158
843 6.7060e-06 3.6092e-06 2.6378e-06 4.2149e-06 1.2050e-08 1.7891e-05 3.0465e-05 0:00:05 1157
844 6.4406e-06 3.4118e-06 2.5884e-06 4.0835e-06 1.1592e-08 1.7447e-05 3.0040e-05 0:00:04 1156

845 6.1880e-06 3.2381e-06 2.5163e-06 3.9750e-06 1.1194e-08 1.6876e-05 2.9212e-05 0:00:03 1155
846 5.9778e-06 3.1015e-06 2.4335e-06 3.8969e-06 1.0772e-08 1.6146e-05 2.7990e-05 0:00:03 1154
847 5.8246e-06 2.9794e-06 2.3454e-06 3.8221e-06 1.0310e-08 1.5271e-05 2.6408e-05 0:00:02 1153

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
848 5.7021e-06 2.8655e-06 2.2605e-06 3.7546e-06 9.9205e-09 1.4326e-05 2.4587e-05 0:00:02 1152
849 5.5952e-06 2.7676e-06 2.1848e-06 3.6620e-06 9.5036e-09 1.3448e-05 2.2769e-05 0:03:52 1151
850 5.5061e-06 2.6841e-06 2.1149e-06 3.5828e-06 9.1144e-09 1.2659e-05 2.1156e-05 0:03:05 1150
851 5.4557e-06 2.6127e-06 2.0555e-06 3.5108e-06 8.7565e-09 1.1984e-05 1.9808e-05 0:02:28 1149
852 5.3962e-06 2.5526e-06 2.0002e-06 3.4412e-06 8.4827e-09 1.1395e-05 1.8729e-05 0:01:58 1148
853 5.3075e-06 2.5005e-06 1.9459e-06 3.3757e-06 8.2948e-09 1.0991e-05 1.7962e-05 0:01:35 1147
854 5.2176e-06 2.4584e-06 1.9057e-06 3.3283e-06 8.1758e-09 1.0788e-05 1.7569e-05 0:01:16 1146
855 5.1616e-06 2.4278e-06 1.8776e-06 3.3025e-06 8.1008e-09 1.0757e-05 1.7358e-05 0:01:00 1145
856 5.1555e-06 2.4106e-06 1.8503e-06 3.3090e-06 8.0575e-09 1.0823e-05 1.7216e-05 0:00:48 1144
857 5.2034e-06 2.4161e-06 1.8201e-06 3.3424e-06 7.9382e-09 1.0972e-05 1.7116e-05 0:00:39 1143
858 5.2777e-06 2.4157e-06 1.7895e-06 3.3952e-06 7.7861e-09 1.1226e-05 1.7079e-05 0:00:31 1142

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
859 5.1511e-06 2.4347e-06 1.7711e-06 3.4844e-06 7.4846e-09 1.1289e-05 1.6665e-05 0:00:25 1141
860 5.4701e-06 2.3801e-06 1.7531e-06 3.5340e-06 7.1666e-09 1.1373e-05 1.6357e-05 0:00:20 1140
861 5.2562e-06 2.3865e-06 1.7487e-06 3.6003e-06 6.9004e-09 1.1415e-05 1.5959e-05 0:00:16 1139
862 5.5798e-06 2.3195e-06 1.7258e-06 3.6432e-06 6.6444e-09 1.1432e-05 1.5620e-05 0:00:13 1138
863 5.3624e-06 2.3359e-06 1.7093e-06 3.6530e-06 6.4932e-09 1.1566e-05 1.5777e-05 0:00:10 1137
864 5.7152e-06 2.2808e-06 1.6758e-06 3.6534e-06 6.3851e-09 1.1713e-05 1.6053e-05 0:00:08 1136
865 5.4560e-06 2.3059e-06 1.6475e-06 3.6048e-06 6.3706e-09 1.1862e-05 1.6287e-05 0:00:06 1135
866 5.8037e-06 2.2666e-06 1.6126e-06 3.5688e-06 6.3766e-09 1.2015e-05 1.6535e-05 0:00:05 1134
867 5.5559e-06 2.3093e-06 1.5872e-06 3.5017e-06 6.4737e-09 1.2187e-05 1.6717e-05 0:00:04 1133
868 5.9146e-06 2.2876e-06 1.5575e-06 3.4575e-06 6.5425e-09 1.2324e-05 1.6864e-05 0:00:03 1132

869 5.6746e-06 2.3360e-06 1.5340e-06 3.3847e-06 6.6552e-09 1.2541e-05 1.7063e-05 0:00:03 1131

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
870 6.0227e-06 2.3064e-06 1.5157e-06 3.3510e-06 6.6425e-09 1.2688e-05 1.7279e-05 0:03:48 1130
871 5.7395e-06 2.3216e-06 1.4966e-06 3.2835e-06 6.6794e-09 1.2862e-05 1.7496e-05 0:03:02 1129
872 6.0337e-06 2.2603e-06 1.4849e-06 3.2612e-06 6.5851e-09 1.2905e-05 1.7597e-05 0:02:26 1128
873 5.7056e-06 2.2361e-06 1.4637e-06 3.1753e-06 6.5708e-09 1.2923e-05 1.7582e-05 0:01:56 1127
874 5.9576e-06 2.1442e-06 1.4485e-06 3.1348e-06 6.4339e-09 1.2732e-05 1.7307e-05 0:01:33 1126
875 5.6028e-06 2.0804e-06 1.4246e-06 3.0302e-06 6.3831e-09 1.2486e-05 1.6812e-05 0:01:14 1125
876 5.7888e-06 1.9707e-06 1.3985e-06 2.9836e-06 6.2269e-09 1.2026e-05 1.6040e-05 0:00:59 1124
877 5.4111e-06 1.8836e-06 1.3604e-06 2.8820e-06 6.1267e-09 1.1577e-05 1.5163e-05 0:00:48 1123
878 5.5290e-06 1.7798e-06 1.3232e-06 2.8296e-06 5.9098e-09 1.0987e-05 1.4211e-05 0:00:38 1122
879 5.1673e-06 1.6898e-06 1.2734e-06 2.7497e-06 5.7716e-09 1.0495e-05 1.3332e-05 0:00:30 1121
880 5.2338e-06 1.6040e-06 1.2314e-06 2.7095e-06 5.5274e-09 9.9662e-06 1.2570e-05 0:00:24 1120

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
881 5.0632e-06 1.5345e-06 1.1792e-06 2.6662e-06 5.3731e-09 9.5496e-06 1.2218e-05 0:00:19 1119
882 4.8833e-06 1.4867e-06 1.1379e-06 2.6256e-06 5.2915e-09 9.2075e-06 1.1975e-05 0:00:16 1118
883 4.7184e-06 1.4551e-06 1.1084e-06 2.5882e-06 5.2503e-09 8.9175e-06 1.1787e-05 0:00:12 1117
884 4.5735e-06 1.4399e-06 1.0901e-06 2.5485e-06 5.2284e-09 8.6388e-06 1.1617e-05 0:00:10 1116
885 4.4447e-06 1.4355e-06 1.0779e-06 2.5078e-06 5.2259e-09 8.3783e-06 1.1484e-05 0:00:08 1115
886 4.3078e-06 1.4383e-06 1.0706e-06 2.4654e-06 5.2392e-09 8.1421e-06 1.1389e-05 0:00:06 1114
887 4.1729e-06 1.4415e-06 1.0715e-06 2.4311e-06 5.2487e-09 7.9584e-06 1.1414e-05 0:00:05 1113
888 4.0439e-06 1.4409e-06 1.0788e-06 2.4026e-06 5.2504e-09 7.8936e-06 1.1601e-05 0:00:04 1112
889 3.9153e-06 1.4375e-06 1.0878e-06 2.3751e-06 5.2295e-09 7.9074e-06 1.1872e-05 0:00:03 1111
890 3.7836e-06 1.4310e-06 1.0973e-06 2.3442e-06 5.1889e-09 7.9381e-06 1.2162e-05 0:00:03 1110
891 3.6568e-06 1.4262e-06 1.1046e-06 2.3104e-06 5.1288e-09 7.9468e-06 1.2412e-05 0:03:44 1109

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

892 3.5262e-06 1.4233e-06 1.1063e-06 2.2685e-06 5.0591e-09 7.9329e-06 1.2616e-05 0:02:59 1108
893 3.4057e-06 1.4195e-06 1.1041e-06 2.2161e-06 4.9858e-09 7.9095e-06 1.2741e-05 0:02:23 1107
894 3.2904e-06 1.4167e-06 1.0968e-06 2.1539e-06 4.9150e-09 7.8650e-06 1.2784e-05 0:01:54 1106
895 3.1708e-06 1.4142e-06 1.0837e-06 2.0828e-06 4.8426e-09 7.7936e-06 1.2734e-05 0:01:31 1105
896 3.0578e-06 1.4128e-06 1.0672e-06 2.0058e-06 4.7793e-09 7.6949e-06 1.2595e-05 0:01:13 1104
897 2.9610e-06 1.4082e-06 1.0486e-06 1.9267e-06 4.7144e-09 7.5733e-06 1.2389e-05 0:00:58 1103
898 2.8793e-06 1.3968e-06 1.0286e-06 1.8467e-06 4.6453e-09 7.4298e-06 1.2149e-05 0:00:47 1102
899 2.8133e-06 1.3773e-06 1.0084e-06 1.7658e-06 4.5626e-09 7.2704e-06 1.1916e-05 0:00:37 1101
900 2.7452e-06 1.3485e-06 9.8711e-07 1.6865e-06 4.4708e-09 7.0989e-06 1.1658e-05 0:00:30 1100
901 2.6801e-06 1.3094e-06 9.6517e-07 1.6123e-06 4.3655e-09 6.9083e-06 1.1372e-05 0:00:24 1099
902 2.6123e-06 1.2631e-06 9.4240e-07 1.5417e-06 4.2538e-09 6.6958e-06 1.1058e-05 0:00:19 1098

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
903 2.5485e-06 1.2139e-06 9.2022e-07 1.4753e-06 4.1420e-09 6.4689e-06 1.0716e-05 0:00:15 1097
904 2.4845e-06 1.1661e-06 8.9801e-07 1.4169e-06 4.0234e-09 6.2325e-06 1.0345e-05 0:00:12 1096
905 2.4287e-06 1.1211e-06 8.7572e-07 1.3657e-06 3.9009e-09 5.9868e-06 9.9327e-06 0:00:10 1095
906 2.3811e-06 1.0785e-06 8.5458e-07 1.3265e-06 3.7792e-09 5.7266e-06 9.4809e-06 0:00:08 1094
907 2.3401e-06 1.0374e-06 8.3608e-07 1.2983e-06 3.6579e-09 5.4564e-06 9.0037e-06 0:00:06 1093
908 2.3007e-06 9.9691e-07 8.1841e-07 1.2772e-06 3.5387e-09 5.1849e-06 8.5031e-06 0:00:05 1092
909 2.2641e-06 9.6086e-07 8.0033e-07 1.2623e-06 3.4161e-09 4.9065e-06 8.0102e-06 0:00:04 1091
910 2.2240e-06 9.2730e-07 7.8172e-07 1.2591e-06 3.2978e-09 4.6560e-06 7.5477e-06 0:00:03 1090
911 2.1885e-06 8.9864e-07 7.6279e-07 1.2662e-06 3.1898e-09 4.4536e-06 7.1473e-06 0:00:03 1089
912 2.1539e-06 8.7304e-07 7.4314e-07 1.2787e-06 3.0885e-09 4.3154e-06 6.8398e-06 0:03:40 1088
913 2.1249e-06 8.5367e-07 7.2403e-07 1.2962e-06 3.0021e-09 4.2305e-06 6.5964e-06 0:02:56 1087

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
914 2.1003e-06 8.4375e-07 7.0764e-07 1.3150e-06 2.9293e-09 4.1747e-06 6.3834e-06 0:02:20 1086
915 2.0830e-06 8.4599e-07 6.9387e-07 1.3358e-06 2.8748e-09 4.1391e-06 6.1953e-06 0:01:52 1085

916 2.0774e-06 8.5372e-07 6.8253e-07 1.3560e-06 2.8248e-09 4.1266e-06 6.0259e-06 0:01:30 1084
917 2.0754e-06 8.6518e-07 6.7458e-07 1.3754e-06 2.7744e-09 4.1347e-06 5.8662e-06 0:01:12 1083
918 2.0853e-06 8.7970e-07 6.6907e-07 1.3931e-06 2.7405e-09 4.1991e-06 5.7686e-06 0:00:57 1082
919 2.0267e-06 9.0927e-07 6.6798e-07 1.4110e-06 2.6720e-09 4.2354e-06 5.7193e-06 0:00:46 1081
920 2.1507e-06 9.0174e-07 6.6093e-07 1.4224e-06 2.6220e-09 4.3380e-06 5.8869e-06 0:00:37 1080
921 2.0824e-06 9.2456e-07 6.5945e-07 1.4227e-06 2.6198e-09 4.4828e-06 6.1674e-06 0:00:29 1079
922 2.2178e-06 9.1527e-07 6.5358e-07 1.4276e-06 2.6099e-09 4.6459e-06 6.4666e-06 0:00:23 1078
923 2.1494e-06 9.3675e-07 6.5245e-07 1.4154e-06 2.6284e-09 4.8023e-06 6.7295e-06 0:00:19 1077
924 2.2921e-06 9.2509e-07 6.4876e-07 1.4117e-06 2.6304e-09 4.9330e-06 6.9462e-06 0:00:15 1076

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
925 2.2141e-06 9.4512e-07 6.4792e-07 1.3871e-06 2.6590e-09 5.0519e-06 7.1125e-06 0:00:12 1075
926 2.3588e-06 9.3155e-07 6.4519e-07 1.3767e-06 2.6574e-09 5.1239e-06 7.2167e-06 0:00:10 1074
927 2.2652e-06 9.4588e-07 6.4107e-07 1.3439e-06 2.6831e-09 5.1914e-06 7.2776e-06 0:00:08 1073
928 2.3945e-06 9.2556e-07 6.3634e-07 1.3280e-06 2.6710e-09 5.2031e-06 7.2684e-06 0:00:06 1072
929 2.2831e-06 9.2870e-07 6.2833e-07 1.2885e-06 2.6855e-09 5.2162e-06 7.2447e-06 0:00:05 1071
930 2.3941e-06 9.0179e-07 6.1971e-07 1.2694e-06 2.6513e-09 5.1662e-06 7.1624e-06 0:00:04 1070
931 2.2704e-06 8.9151e-07 6.0659e-07 1.2249e-06 2.6494e-09 5.1253e-06 7.0503e-06 0:00:03 1069
932 2.3585e-06 8.5361e-07 5.9410e-07 1.2068e-06 2.5928e-09 5.0148e-06 6.8612e-06 0:00:02 1068
933 2.2243e-06 8.2836e-07 5.7601e-07 1.1633e-06 2.5707e-09 4.9058e-06 6.6481e-06 0:00:02 1067
934 2.2850e-06 7.8407e-07 5.6107e-07 1.1425e-06 2.4921e-09 4.7347e-06 6.3780e-06 0:00:02 1066
935 2.2215e-06 7.4108e-07 5.3969e-07 1.1108e-06 2.4477e-09 4.5377e-06 6.0599e-06 0:03:34 1065

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
936 2.0891e-06 7.1001e-07 5.2369e-07 1.0720e-06 2.4108e-09 4.3409e-06 5.7003e-06 0:02:51 1064
937 2.1265e-06 6.7206e-07 5.0857e-07 1.0572e-06 2.3202e-09 4.1087e-06 5.3362e-06 0:02:17 1063
938 2.0600e-06 6.3854e-07 4.8699e-07 1.0410e-06 2.2460e-09 3.8800e-06 4.9795e-06 0:01:49 1062
939 1.9873e-06 6.1188e-07 4.6896e-07 1.0249e-06 2.1829e-09 3.6679e-06 4.6486e-06 0:01:27 1061

940 1.9231e-06 5.9129e-07 4.5526e-07 1.0119e-06 2.1206e-09 3.4721e-06 4.4221e-06 0:01:10 1060
941 1.8615e-06 5.7451e-07 4.4305e-07 1.0034e-06 2.0639e-09 3.3059e-06 4.2859e-06 0:00:56 1059
942 1.7990e-06 5.6031e-07 4.3260e-07 9.9647e-07 2.0277e-09 3.1822e-06 4.2104e-06 0:00:45 1058
943 1.7341e-06 5.5061e-07 4.2477e-07 9.8828e-07 2.0132e-09 3.0902e-06 4.1960e-06 0:00:36 1057
944 1.6743e-06 5.4571e-07 4.2154e-07 9.8065e-07 2.0087e-09 3.0284e-06 4.2394e-06 0:00:29 1056
945 1.6190e-06 5.4353e-07 4.2064e-07 9.7263e-07 2.0086e-09 3.0154e-06 4.3357e-06 0:00:23 1055
946 1.5679e-06 5.4596e-07 4.2184e-07 9.6338e-07 2.0091e-09 3.0231e-06 4.4391e-06 0:00:18 1054

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
947 1.5180e-06 5.5029e-07 4.2429e-07 9.5268e-07 2.0075e-09 3.0390e-06 4.5461e-06 0:00:15 1053
948 1.4699e-06 5.5532e-07 4.2639e-07 9.4019e-07 2.0015e-09 3.0519e-06 4.6550e-06 0:00:12 1052
949 1.4242e-06 5.6086e-07 4.2869e-07 9.2539e-07 1.9916e-09 3.0721e-06 4.7604e-06 0:00:09 1051
950 1.3823e-06 5.6621e-07 4.3096e-07 9.0737e-07 1.9772e-09 3.0945e-06 4.8518e-06 0:00:07 1050
951 1.3418e-06 5.7209e-07 4.3215e-07 8.8638e-07 1.9614e-09 3.1097e-06 4.9184e-06 0:00:06 1049
952 1.3052e-06 5.7701e-07 4.3195e-07 8.6227e-07 1.9421e-09 3.1144e-06 4.9518e-06 0:00:05 1048
953 1.2746e-06 5.8019e-07 4.3056e-07 8.3666e-07 1.9211e-09 3.1082e-06 4.9536e-06 0:00:04 1047
954 1.2494e-06 5.8066e-07 4.2746e-07 8.0939e-07 1.8971e-09 3.0888e-06 4.9273e-06 0:00:03 1046
955 1.2300e-06 5.7844e-07 4.2330e-07 7.8112e-07 1.8710e-09 3.0548e-06 4.8825e-06 0:00:02 1045
956 1.2131e-06 5.7273e-07 4.1764e-07 7.5103e-07 1.8443e-09 3.0138e-06 4.8280e-06 0:03:31 1044
957 1.1951e-06 5.6326e-07 4.1079e-07 7.2010e-07 1.8146e-09 2.9609e-06 4.7563e-06 0:02:48 1043

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
958 1.1758e-06 5.5012e-07 4.0244e-07 6.8911e-07 1.7816e-09 2.9009e-06 4.6660e-06 0:02:15 1042
959 1.1553e-06 5.3406e-07 3.9298e-07 6.5897e-07 1.7463e-09 2.8347e-06 4.5659e-06 0:01:48 1041
960 1.1336e-06 5.1677e-07 3.8311e-07 6.3061e-07 1.7079e-09 2.7606e-06 4.4517e-06 0:01:26 1040
961 1.1075e-06 4.9892e-07 3.7282e-07 6.0464e-07 1.6665e-09 2.6785e-06 4.3126e-06 0:01:09 1039
962 1.0827e-06 4.7934e-07 3.6221e-07 5.8173e-07 1.6234e-09 2.5858e-06 4.1533e-06 0:00:55 1038
963 1.0635e-06 4.5956e-07 3.5159e-07 5.6295e-07 1.5809e-09 2.4838e-06 3.9786e-06 0:00:44 1037

964 1.0453e-06 4.4015e-07 3.4198e-07 5.4787e-07 1.5363e-09 2.3782e-06 3.7930e-06 0:00:35 1036
965 1.0259e-06 4.2152e-07 3.3439e-07 5.3666e-07 1.4887e-09 2.2684e-06 3.5980e-06 0:00:28 1035
966 1.0043e-06 4.0327e-07 3.2681e-07 5.3025e-07 1.4411e-09 2.1520e-06 3.3908e-06 0:00:22 1034
967 9.8378e-07 3.8596e-07 3.1886e-07 5.2809e-07 1.3938e-09 2.0306e-06 3.1784e-06 0:00:18 1033
968 9.6191e-07 3.7022e-07 3.1062e-07 5.2920e-07 1.3475e-09 1.9087e-06 2.9738e-06 0:00:14 1032

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
969 9.4083e-07 3.5686e-07 3.0224e-07 5.3385e-07 1.3024e-09 1.8006e-06 2.7863e-06 0:00:11 1031
970 9.2054e-07 3.4644e-07 2.9440e-07 5.3978e-07 1.2593e-09 1.7176e-06 2.6384e-06 0:00:09 1030
971 9.0139e-07 3.3897e-07 2.8701e-07 5.4620e-07 1.2196e-09 1.6724e-06 2.5275e-06 0:00:07 1029
972 8.8507e-07 3.3630e-07 2.8049e-07 5.5247e-07 1.1831e-09 1.6433e-06 2.4374e-06 0:00:06 1028
973 8.7145e-07 3.3712e-07 2.7504e-07 5.5870e-07 1.1522e-09 1.6285e-06 2.3567e-06 0:00:05 1027
974 8.5962e-07 3.4035e-07 2.7124e-07 5.6465e-07 1.1265e-09 1.6269e-06 2.2891e-06 0:00:04 1026
975 8.5172e-07 3.4483e-07 2.6808e-07 5.6927e-07 1.1020e-09 1.6401e-06 2.2507e-06 0:00:03 1025
976 8.4669e-07 3.5083e-07 2.6566e-07 5.7275e-07 1.0807e-09 1.6682e-06 2.2714e-06 0:03:27 1024
977 8.4581e-07 3.5722e-07 2.6368e-07 5.7488e-07 1.0756e-09 1.7216e-06 2.3517e-06 0:02:46 1023
978 8.1936e-07 3.6907e-07 2.6339e-07 5.7668e-07 1.0704e-09 1.7658e-06 2.4347e-06 0:02:12 1022
979 8.6876e-07 3.6620e-07 2.6189e-07 5.7774e-07 1.0657e-09 1.8217e-06 2.5407e-06 0:01:46 1021

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
980 8.4115e-07 3.7689e-07 2.6297e-07 5.7312e-07 1.0767e-09 1.8837e-06 2.6580e-06 0:01:25 1020
981 8.9898e-07 3.7452e-07 2.6328e-07 5.7188e-07 1.0810e-09 1.9469e-06 2.7722e-06 0:01:08 1019
982 8.7396e-07 3.8471e-07 2.6457e-07 5.6424e-07 1.0919e-09 2.0064e-06 2.8676e-06 0:00:54 1018
983 9.3226e-07 3.8092e-07 2.6484e-07 5.6121e-07 1.0918e-09 2.0500e-06 2.9351e-06 0:00:43 1017
984 8.9906e-07 3.8868e-07 2.6491e-07 5.4868e-07 1.1034e-09 2.0874e-06 2.9812e-06 0:00:34 1016
985 9.5302e-07 3.8144e-07 2.6427e-07 5.4179e-07 1.0980e-09 2.1010e-06 2.9965e-06 0:00:28 1015
986 9.0959e-07 3.8444e-07 2.6223e-07 5.2544e-07 1.1053e-09 2.1122e-06 3.0009e-06 0:00:22 1014
987 9.5617e-07 3.7375e-07 2.5915e-07 5.1615e-07 1.0936e-09 2.0975e-06 2.9693e-06 0:00:18 1013

988 9.0748e-07 3.7105e-07 2.5377e-07 4.9654e-07 1.0933e-09 2.0843e-06 2.9329e-06 0:00:14 1012
989 9.4526e-07 3.5676e-07 2.4893e-07 4.8700e-07 1.0686e-09 2.0475e-06 2.8716e-06 0:00:11 1011
990 9.2831e-07 3.4353e-07 2.4155e-07 4.7071e-07 1.0558e-09 1.9990e-06 2.7885e-06 0:00:09 1010

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
991 8.7808e-07 3.3401e-07 2.3393e-07 4.5079e-07 1.0477e-09 1.9496e-06 2.6873e-06 0:00:07 1009
992 9.0311e-07 3.1523e-07 2.2721e-07 4.4287e-07 1.0143e-09 1.8770e-06 2.5694e-06 0:00:06 1008
993 8.7732e-07 2.9705e-07 2.1763e-07 4.3145e-07 9.8737e-10 1.7958e-06 2.4373e-06 0:00:05 1007
994 8.5147e-07 2.8054e-07 2.0945e-07 4.2075e-07 9.6433e-10 1.7073e-06 2.2880e-06 0:00:04 1006
995 8.3023e-07 2.6577e-07 2.0195e-07 4.1307e-07 9.3883e-10 1.6131e-06 2.1306e-06 0:00:03 1005
996 8.0837e-07 2.5362e-07 1.9487e-07 4.0773e-07 9.1142e-10 1.5160e-06 1.9744e-06 0:00:02 1004
997 7.8483e-07 2.4361e-07 1.8862e-07 4.0444e-07 8.8574e-10 1.4236e-06 1.8259e-06 0:00:02 1003
998 7.5919e-07 2.3531e-07 1.8321e-07 4.0290e-07 8.6039e-10 1.3380e-06 1.6939e-06 0:00:01 1002
999 7.3285e-07 2.2839e-07 1.7864e-07 4.0197e-07 8.3398e-10 1.2642e-06 1.6152e-06 0:03:21 1001
1000 7.0712e-07 2.2292e-07 1.7483e-07 4.0076e-07 8.1125e-10 1.2086e-06 1.5825e-06 0:02:41 1000
1001 6.8400e-07 2.1904e-07 1.7172e-07 3.9914e-07 7.9743e-10 1.1723e-06 1.5878e-06 0:02:09 999

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1002 6.5995e-07 2.1688e-07 1.6975e-07 3.9650e-07 7.9215e-10 1.1611e-06 1.6264e-06 0:01:43 998
1003 6.3632e-07 2.1686e-07 1.6913e-07 3.9314e-07 7.8991e-10 1.1650e-06 1.6737e-06 0:01:22 997
1004 6.1613e-07 2.1796e-07 1.6900e-07 3.8958e-07 7.8905e-10 1.1759e-06 1.7271e-06 0:01:06 996
1005 5.9803e-07 2.2020e-07 1.6945e-07 3.8578e-07 7.8934e-10 1.1910e-06 1.7852e-06 0:00:52 995
1006 5.8083e-07 2.2301e-07 1.7048e-07 3.8111e-07 7.8903e-10 1.2104e-06 1.8384e-06 0:00:42 994
1007 5.6559e-07 2.2625e-07 1.7163e-07 3.7546e-07 7.8683e-10 1.2290e-06 1.8850e-06 0:00:34 993
1008 5.5233e-07 2.3021e-07 1.7308e-07 3.6881e-07 7.8433e-10 1.2440e-06 1.9223e-06 0:00:27 992
1009 5.4096e-07 2.3436e-07 1.7428e-07 3.6113e-07 7.8165e-10 1.2558e-06 1.9496e-06 0:00:21 991
1010 5.3120e-07 2.3772e-07 1.7496e-07 3.5273e-07 7.7794e-10 1.2631e-06 1.9684e-06 0:00:17 990
1011 5.2454e-07 2.4024e-07 1.7505e-07 3.4337e-07 7.7249e-10 1.2657e-06 1.9801e-06 0:00:14 989

1012 5.2056e-07 2.4126e-07 1.7459e-07 3.3329e-07 7.6529e-10 1.2648e-06 1.9853e-06 0:00:11 988

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1013 5.1682e-07 2.4034e-07 1.7333e-07 3.2255e-07 7.5679e-10 1.2579e-06 1.9821e-06 0:00:09 987
1014 5.1298e-07 2.3795e-07 1.7153e-07 3.1077e-07 7.4781e-10 1.2463e-06 1.9677e-06 0:00:07 986
1015 5.0838e-07 2.3388e-07 1.6906e-07 2.9823e-07 7.3782e-10 1.2316e-06 1.9451e-06 0:03:23 985
1016 5.0297e-07 2.2837e-07 1.6591e-07 2.8572e-07 7.2686e-10 1.2122e-06 1.9183e-06 0:02:42 984
1017 4.9593e-07 2.2212e-07 1.6213e-07 2.7337e-07 7.1416e-10 1.1892e-06 1.8812e-06 0:02:09 983
1018 4.8688e-07 2.1547e-07 1.5810e-07 2.6204e-07 6.9997e-10 1.1611e-06 1.8315e-06 0:01:43 982
1019 4.7777e-07 2.0796e-07 1.5370e-07 2.5196e-07 6.8422e-10 1.1272e-06 1.7738e-06 0:01:23 981
1020 4.6925e-07 1.9953e-07 1.4906e-07 2.4309e-07 6.6789e-10 1.0886e-06 1.7078e-06 0:01:06 980
1021 4.6123e-07 1.9073e-07 1.4440e-07 2.3608e-07 6.5123e-10 1.0466e-06 1.6344e-06 0:00:53 979
1022 4.5272e-07 1.8188e-07 1.4002e-07 2.3037e-07 6.3310e-10 1.0020e-06 1.5542e-06 0:00:42 978
1023 4.4346e-07 1.7350e-07 1.3640e-07 2.2678e-07 6.1325e-10 9.5276e-07 1.4674e-06 0:00:34 977

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1024 4.3344e-07 1.6520e-07 1.3287e-07 2.2512e-07 5.9419e-10 9.0033e-07 1.3767e-06 0:00:27 976
1025 4.2338e-07 1.5733e-07 1.2914e-07 2.2514e-07 5.7511e-10 8.4685e-07 1.2851e-06 0:00:22 975
1026 4.1275e-07 1.5048e-07 1.2548e-07 2.2636e-07 5.5608e-10 7.9279e-07 1.1946e-06 0:00:17 974
1027 4.0258e-07 1.4480e-07 1.2203e-07 2.2811e-07 5.3768e-10 7.4174e-07 1.1093e-06 0:00:14 973
1028 3.9267e-07 1.4080e-07 1.1893e-07 2.3028e-07 5.2015e-10 7.0082e-07 1.0421e-06 0:00:11 972
1029 3.8310e-07 1.3880e-07 1.1620e-07 2.3222e-07 5.0294e-10 6.7754e-07 9.9596e-07 0:00:09 971
1030 3.7425e-07 1.3774e-07 1.1374e-07 2.3409e-07 4.8696e-10 6.6511e-07 9.5813e-07 0:00:07 970
1031 3.6650e-07 1.3798e-07 1.1172e-07 2.3568e-07 4.7335e-10 6.6136e-07 9.2833e-07 0:00:06 969
1032 3.6010e-07 1.3937e-07 1.1022e-07 2.3698e-07 4.6085e-10 6.6420e-07 9.1595e-07 0:00:04 968
1033 3.5445e-07 1.4138e-07 1.0892e-07 2.3786e-07 4.5119e-10 6.7518e-07 9.2938e-07 0:00:04 967
1034 3.5025e-07 1.4364e-07 1.0784e-07 2.3818e-07 4.4664e-10 6.9413e-07 9.6442e-07 0:00:03 966

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

1035 3.4823e-07 1.4619e-07 1.0726e-07 2.3801e-07 4.4727e-10 7.2105e-07 1.0048e-06 0:00:02 965
1036 3.3630e-07 1.5127e-07 1.0741e-07 2.3806e-07 4.4822e-10 7.4040e-07 1.0395e-06 0:00:02 964
1037 3.5472e-07 1.5094e-07 1.0751e-07 2.3805e-07 4.4777e-10 7.6204e-07 1.0791e-06 0:00:01 963
1038 3.4389e-07 1.5557e-07 1.0851e-07 2.3556e-07 4.5189e-10 7.8361e-07 1.1209e-06 0:00:01 962
1039 3.6728e-07 1.5505e-07 1.0918e-07 2.3439e-07 4.5374e-10 8.0726e-07 1.1648e-06 0:03:13 961
1040 3.5627e-07 1.5947e-07 1.0986e-07 2.3080e-07 4.5764e-10 8.2908e-07 1.2012e-06 0:02:34 960
1041 3.7974e-07 1.5770e-07 1.1034e-07 2.2884e-07 4.5753e-10 8.4527e-07 1.2265e-06 0:02:03 959
1042 3.6565e-07 1.6064e-07 1.1041e-07 2.2322e-07 4.6154e-10 8.5866e-07 1.2447e-06 0:01:39 958
1043 3.8688e-07 1.5754e-07 1.1007e-07 2.1961e-07 4.5670e-10 8.6310e-07 1.2495e-06 0:01:19 957
1044 3.8460e-07 1.5596e-07 1.0887e-07 2.1293e-07 4.5726e-10 8.6217e-07 1.2448e-06 0:01:03 956
1045 3.6725e-07 1.5645e-07 1.0724e-07 2.0496e-07 4.5885e-10 8.5952e-07 1.2330e-06 0:00:50 955

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1046 3.8564e-07 1.5088e-07 1.0545e-07 2.0105e-07 4.4961e-10 8.4722e-07 1.2130e-06 0:00:40 954
1047 3.7933e-07 1.4588e-07 1.0257e-07 1.9423e-07 4.4310e-10 8.3210e-07 1.1863e-06 0:00:32 953
1048 3.7237e-07 1.4070e-07 9.9554e-08 1.8668e-07 4.3657e-10 8.1275e-07 1.1496e-06 0:00:26 952
1049 3.6623e-07 1.3479e-07 9.6370e-08 1.8023e-07 4.2873e-10 7.8764e-07 1.1041e-06 0:00:21 951
1050 3.5942e-07 1.2825e-07 9.2857e-08 1.7481e-07 4.1910e-10 7.5708e-07 1.0516e-06 0:00:16 950
1051 3.5145e-07 1.2128e-07 8.9316e-08 1.7050e-07 4.0825e-10 7.2221e-07 9.9314e-07 0:00:13 949
1052 3.4317e-07 1.1426e-07 8.5937e-08 1.6784e-07 3.9733e-10 6.8494e-07 9.3044e-07 0:00:10 948
1053 3.3445e-07 1.0776e-07 8.2683e-08 1.6618e-07 3.8642e-10 6.4549e-07 8.6500e-07 0:00:08 947
1054 3.2502e-07 1.0267e-07 7.9861e-08 1.6497e-07 3.7500e-10 6.0498e-07 7.9987e-07 0:00:07 946
1055 3.1507e-07 9.8615e-08 7.7410e-08 1.6457e-07 3.6460e-10 5.6566e-07 7.3556e-07 0:00:05 945
1056 3.0459e-07 9.5286e-08 7.5276e-08 1.6459e-07 3.5394e-10 5.2936e-07 6.7607e-07 0:00:04 944

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1057 2.9399e-07 9.2508e-08 7.3604e-08 1.6451e-07 3.4278e-10 4.9858e-07 6.3494e-07 0:00:03 943
1058 2.8471e-07 9.0601e-08 7.2161e-08 1.6451e-07 3.3172e-10 4.7463e-07 6.2097e-07 0:00:03 942

1059 2.7523e-07 8.9423e-08 7.0937e-08 1.6392e-07 3.2459e-10 4.6265e-07 6.2873e-07 0:00:02 941
1060 2.6569e-07 8.9042e-08 6.9969e-08 1.6295e-07 3.2062e-10 4.6147e-07 6.4619e-07 0:00:02 940
1061 2.5644e-07 8.9079e-08 6.9424e-08 1.6165e-07 3.1886e-10 4.6553e-07 6.6907e-07 0:00:01 939
1062 2.4807e-07 8.9685e-08 6.9155e-08 1.6018e-07 3.1858e-10 4.7309e-07 6.9503e-07 0:03:09 938
1063 2.4107e-07 9.0830e-08 6.9345e-08 1.5871e-07 3.1867e-10 4.8365e-07 7.2165e-07 0:02:31 937
1064 2.3504e-07 9.2334e-08 6.9824e-08 1.5691e-07 3.1884e-10 4.9477e-07 7.4592e-07 0:02:01 936
1065 2.3007e-07 9.4104e-08 7.0473e-08 1.5472e-07 3.1945e-10 5.0490e-07 7.6712e-07 0:01:36 935
1066 2.2637e-07 9.6062e-08 7.1097e-08 1.5230e-07 3.1983e-10 5.1354e-07 7.8396e-07 0:01:17 934
1067 2.2323e-07 9.7971e-08 7.1843e-08 1.4960e-07 3.1955e-10 5.1947e-07 7.9634e-07 0:01:02 933

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1068 2.2132e-07 9.9540e-08 7.2337e-08 1.4644e-07 3.1816e-10 5.2354e-07 8.0595e-07 0:00:49 932
1069 2.2035e-07 1.0066e-07 7.2568e-08 1.4288e-07 3.1622e-10 5.2641e-07 8.1316e-07 0:00:39 931
1070 2.1976e-07 1.0103e-07 7.2493e-08 1.3882e-07 3.1389e-10 5.2674e-07 8.1748e-07 0:00:31 930
1071 2.1920e-07 1.0065e-07 7.2082e-08 1.3446e-07 3.1083e-10 5.2549e-07 8.1781e-07 0:00:25 929
1072 2.1850e-07 9.9527e-08 7.1360e-08 1.2970e-07 3.0780e-10 5.2298e-07 8.1506e-07 0:00:20 928
1073 2.1738e-07 9.7856e-08 7.0365e-08 1.2461e-07 3.0451e-10 5.1835e-07 8.0939e-07 0:00:16 927
1074 2.1545e-07 9.5735e-08 6.9065e-08 1.1956e-07 3.0073e-10 5.1184e-07 7.9915e-07 0:00:13 926
1075 2.1254e-07 9.3297e-08 6.7537e-08 1.1458e-07 2.9602e-10 5.0269e-07 7.8260e-07 0:00:10 925
1076 2.0910e-07 9.0443e-08 6.5795e-08 1.1002e-07 2.9053e-10 4.9054e-07 7.6101e-07 0:00:08 924
1077 2.0574e-07 8.7165e-08 6.3885e-08 1.0595e-07 2.8440e-10 4.7611e-07 7.3548e-07 0:00:07 923
1078 2.0227e-07 8.3461e-08 6.1890e-08 1.0253e-07 2.7741e-10 4.5954e-07 7.0759e-07 0:00:05 922

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1079 1.9846e-07 7.9589e-08 5.9891e-08 9.9630e-08 2.7041e-10 4.4189e-07 6.7577e-07 0:00:04 921
1080 1.9460e-07 7.5649e-08 5.7990e-08 9.7581e-08 2.6260e-10 4.2182e-07 6.4068e-07 0:00:03 920
1081 1.9023e-07 7.1833e-08 5.6235e-08 9.6433e-08 2.5450e-10 4.0010e-07 6.0218e-07 0:00:03 919
1082 1.8575e-07 6.8156e-08 5.4582e-08 9.5977e-08 2.4657e-10 3.7661e-07 5.6266e-07 0:00:02 918

1083 1.8094e-07 6.4676e-08 5.2913e-08 9.6279e-08 2.3857e-10 3.5313e-07 5.2331e-07 0:00:02 917
1084 1.7612e-07 6.1788e-08 5.1398e-08 9.6866e-08 2.3078e-10 3.2935e-07 4.8364e-07 0:03:05 916
1085 1.7148e-07 5.9515e-08 4.9995e-08 9.7532e-08 2.2315e-10 3.0684e-07 4.4608e-07 0:02:27 915
1086 1.6692e-07 5.8220e-08 4.8808e-08 9.8214e-08 2.1575e-10 2.8894e-07 4.1823e-07 0:01:58 914
1087 1.6257e-07 5.7547e-08 4.7741e-08 9.8872e-08 2.0867e-10 2.7863e-07 3.9857e-07 0:01:34 913
1088 1.5827e-07 5.7215e-08 4.6798e-08 9.9422e-08 2.0219e-10 2.7395e-07 3.8399e-07 0:01:15 912
1089 1.5458e-07 5.7366e-08 4.6016e-08 9.9706e-08 1.9641e-10 2.7366e-07 3.7753e-07 0:01:00 911

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1090 1.5144e-07 5.8016e-08 4.5393e-08 9.9861e-08 1.9130e-10 2.7702e-07 3.8299e-07 0:00:48 910
1091 1.4859e-07 5.8846e-08 4.4861e-08 9.9800e-08 1.8869e-10 2.8411e-07 3.9757e-07 0:00:38 909
1092 1.4638e-07 5.9771e-08 4.4506e-08 9.9605e-08 1.8799e-10 2.9354e-07 4.1381e-07 0:00:31 908
1093 1.4511e-07 6.0902e-08 4.4419e-08 9.9265e-08 1.8813e-10 3.0375e-07 4.3014e-07 0:00:25 907
1094 1.4489e-07 6.2157e-08 4.4591e-08 9.8872e-08 1.8976e-10 3.1556e-07 4.4905e-07 0:00:20 906
1095 1.4079e-07 6.4323e-08 4.5055e-08 9.8576e-08 1.9103e-10 3.2307e-07 4.6370e-07 0:00:16 905
1096 1.4989e-07 6.4107e-08 4.5430e-08 9.8353e-08 1.9063e-10 3.3061e-07 4.7830e-07 0:00:13 904
1097 1.4515e-07 6.6012e-08 4.5900e-08 9.6865e-08 1.9246e-10 3.3863e-07 4.9295e-07 0:00:10 903
1098 1.5451e-07 6.5498e-08 4.6212e-08 9.5998e-08 1.9246e-10 3.4598e-07 5.0611e-07 0:00:08 902
1099 1.4930e-07 6.7025e-08 4.6385e-08 9.3906e-08 1.9377e-10 3.5265e-07 5.1660e-07 0:00:06 901
1100 1.5843e-07 6.5932e-08 4.6366e-08 9.2511e-08 1.9215e-10 3.5595e-07 5.2176e-07 0:00:05 900

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1101 1.5794e-07 6.5561e-08 4.6029e-08 8.9708e-08 1.9160e-10 3.5787e-07 5.2325e-07 0:00:04 899
1102 1.5717e-07 6.5057e-08 4.5479e-08 8.6655e-08 1.9136e-10 3.5723e-07 5.2109e-07 0:00:03 898
1103 1.5666e-07 6.4072e-08 4.4694e-08 8.3772e-08 1.9022e-10 3.5408e-07 5.1484e-07 0:00:03 897
1104 1.5579e-07 6.2508e-08 4.3747e-08 8.1038e-08 1.8826e-10 3.4889e-07 5.0496e-07 0:00:02 896
1105 1.5433e-07 6.0502e-08 4.2624e-08 7.8250e-08 1.8564e-10 3.4160e-07 4.9200e-07 0:00:02 895
1106 1.5230e-07 5.8139e-08 4.1330e-08 7.5535e-08 1.8245e-10 3.3241e-07 4.7566e-07 0:03:00 894

1107 1.4961e-07 5.5510e-08 3.9956e-08 7.3101e-08 1.7881e-10 3.2166e-07 4.5607e-07 0:02:24 893
1108 1.4652e-07 5.2754e-08 3.8468e-08 7.1100e-08 1.7466e-10 3.0890e-07 4.3392e-07 0:01:55 892
1109 1.4334e-07 4.9890e-08 3.6999e-08 6.9618e-08 1.7000e-10 2.9448e-07 4.0918e-07 0:01:32 891
1110 1.4007e-07 4.6949e-08 3.5569e-08 6.8735e-08 1.6538e-10 2.7859e-07 3.8289e-07 0:01:13 890
1111 1.3657e-07 4.4332e-08 3.4288e-08 6.8231e-08 1.6052e-10 2.6213e-07 3.5544e-07 0:00:59 889

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1112 1.3264e-07 4.2221e-08 3.3175e-08 6.8065e-08 1.5588e-10 2.4543e-07 3.2782e-07 0:00:47 888
1113 1.2845e-07 4.0569e-08 3.2186e-08 6.8109e-08 1.5138e-10 2.2899e-07 3.0103e-07 0:00:37 887
1114 1.2407e-07 3.9198e-08 3.1384e-08 6.8224e-08 1.4691e-10 2.1369e-07 2.7596e-07 0:00:30 886
1115 1.2006e-07 3.8179e-08 3.0710e-08 6.8378e-08 1.4209e-10 2.0083e-07 2.5736e-07 0:00:24 885
1116 1.1630e-07 3.7547e-08 3.0157e-08 6.8406e-08 1.3731e-10 1.9156e-07 2.5199e-07 0:00:19 884
1117 1.1241e-07 3.7231e-08 2.9654e-08 6.8190e-08 1.3397e-10 1.8815e-07 2.5692e-07 0:00:15 883
1118 1.0851e-07 3.7146e-08 2.9203e-08 6.7806e-08 1.3187e-10 1.8834e-07 2.6472e-07 0:00:12 882
1119 1.0485e-07 3.7187e-08 2.8890e-08 6.7275e-08 1.3107e-10 1.9121e-07 2.7536e-07 0:00:10 881
1120 1.0143e-07 3.7519e-08 2.8779e-08 6.6659e-08 1.3080e-10 1.9558e-07 2.8679e-07 0:00:08 880
1121 9.8745e-08 3.8105e-08 2.8834e-08 6.5986e-08 1.3090e-10 2.0089e-07 2.9821e-07 0:00:06 879
1122 9.6746e-08 3.8802e-08 2.9051e-08 6.5238e-08 1.3112e-10 2.0600e-07 3.0857e-07 0:00:05 878

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1123 9.5185e-08 3.9647e-08 2.9342e-08 6.4374e-08 1.3180e-10 2.1069e-07 3.1756e-07 0:00:04 877
1124 9.4086e-08 4.0508e-08 2.9653e-08 6.3451e-08 1.3227e-10 2.1458e-07 3.2467e-07 0:00:03 876
1125 9.3413e-08 4.1334e-08 2.9986e-08 6.2431e-08 1.3232e-10 2.1751e-07 3.3049e-07 0:00:03 875
1126 9.3283e-08 4.2036e-08 3.0268e-08 6.1217e-08 1.3199e-10 2.1988e-07 3.3519e-07 0:00:02 874
1127 9.3418e-08 4.2492e-08 3.0418e-08 5.9802e-08 1.3141e-10 2.2123e-07 3.3901e-07 0:00:02 873
1128 9.3578e-08 4.2630e-08 3.0412e-08 5.8228e-08 1.3061e-10 2.2185e-07 3.4146e-07 0:02:56 872
1129 9.3520e-08 4.2431e-08 3.0259e-08 5.6438e-08 1.2955e-10 2.2213e-07 3.4259e-07 0:02:20 871
1130 9.3451e-08 4.1919e-08 2.9946e-08 5.4487e-08 1.2837e-10 2.2140e-07 3.4215e-07 0:01:52 870

1131 9.3033e-08 4.1188e-08 2.9510e-08 5.2403e-08 1.2711e-10 2.1958e-07 3.3946e-07 0:01:30 869
1132 9.2079e-08 4.0305e-08 2.8942e-08 5.0341e-08 1.2549e-10 2.1673e-07 3.3430e-07 0:01:12 868
1133 9.0813e-08 3.9239e-08 2.8268e-08 4.8249e-08 1.2346e-10 2.1257e-07 3.2671e-07 0:00:57 867

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1134 8.9425e-08 3.7940e-08 2.7491e-08 4.6375e-08 1.2119e-10 2.0714e-07 3.1720e-07 0:00:46 866
1135 8.8056e-08 3.6456e-08 2.6639e-08 4.4688e-08 1.1857e-10 2.0075e-07 3.0621e-07 0:00:37 865
1136 8.6553e-08 3.4848e-08 2.5773e-08 4.3331e-08 1.1570e-10 1.9367e-07 2.9366e-07 0:00:29 864
1137 8.4910e-08 3.3145e-08 2.4914e-08 4.2162e-08 1.1268e-10 1.8585e-07 2.7977e-07 0:00:23 863
1138 8.3197e-08 3.1437e-08 2.4083e-08 4.1438e-08 1.0945e-10 1.7704e-07 2.6432e-07 0:00:19 862
1139 8.1310e-08 2.9794e-08 2.3285e-08 4.1080e-08 1.0614e-10 1.6737e-07 2.4754e-07 0:00:15 861
1140 7.9294e-08 2.8237e-08 2.2545e-08 4.0964e-08 1.0287e-10 1.5729e-07 2.3066e-07 0:00:12 860
1141 7.7117e-08 2.6788e-08 2.1863e-08 4.1133e-08 9.9653e-11 1.4712e-07 2.1387e-07 0:00:10 859
1142 7.4965e-08 2.5626e-08 2.1261e-08 4.1379e-08 9.6469e-11 1.3699e-07 1.9701e-07 0:00:08 858
1143 7.2902e-08 2.4835e-08 2.0718e-08 4.1604e-08 9.3347e-11 1.2760e-07 1.8175e-07 0:00:06 857
1144 7.0921e-08 2.4409e-08 2.0250e-08 4.1833e-08 9.0321e-11 1.2027e-07 1.7028e-07 0:00:05 856

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1145 6.8972e-08 2.4153e-08 1.9841e-08 4.2061e-08 8.7374e-11 1.1632e-07 1.6256e-07 0:00:04 855
1146 6.7041e-08 2.4050e-08 1.9475e-08 4.2198e-08 8.4607e-11 1.1475e-07 1.5808e-07 0:00:03 854
1147 6.5342e-08 2.4125e-08 1.9172e-08 4.2252e-08 8.2136e-11 1.1532e-07 1.5880e-07 0:00:02 853
1148 6.3858e-08 2.4397e-08 1.8907e-08 4.2205e-08 8.0269e-11 1.1752e-07 1.6440e-07 0:00:02 852
1149 6.2546e-08 2.4692e-08 1.8717e-08 4.2090e-08 7.9553e-11 1.2115e-07 1.7129e-07 0:00:02 851
1150 6.1494e-08 2.5083e-08 1.8606e-08 4.1910e-08 7.9525e-11 1.2530e-07 1.7841e-07 0:00:01 850
1151 6.0870e-08 2.5583e-08 1.8647e-08 4.1707e-08 7.9738e-11 1.2960e-07 1.8569e-07 0:00:01 849
1152 6.0875e-08 2.6096e-08 1.8770e-08 4.1487e-08 8.0037e-11 1.3350e-07 1.9219e-07 0:02:50 848
1153 6.1355e-08 2.6621e-08 1.8978e-08 4.1237e-08 8.0572e-11 1.3703e-07 1.9850e-07 0:02:16 847
1154 6.2140e-08 2.7110e-08 1.9191e-08 4.0890e-08 8.0946e-11 1.4004e-07 2.0435e-07 0:01:49 846

1155 6.3075e-08 2.7480e-08 1.9362e-08 4.0386e-08 8.1363e-11 1.4303e-07 2.0964e-07 0:01:27 845

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1156 6.3932e-08 2.7721e-08 1.9485e-08 3.9740e-08 8.1643e-11 1.4567e-07 2.1469e-07 0:01:09 844
1157 6.4687e-08 2.7831e-08 1.9543e-08 3.8995e-08 8.1637e-11 1.4777e-07 2.1821e-07 0:00:56 843
1158 6.5173e-08 2.7817e-08 1.9500e-08 3.8070e-08 8.1567e-11 1.4893e-07 2.1983e-07 0:00:44 842
1159 6.5357e-08 2.7626e-08 1.9349e-08 3.7032e-08 8.1278e-11 1.4929e-07 2.1988e-07 0:00:35 841
1160 6.5313e-08 2.7287e-08 1.9087e-08 3.5852e-08 8.0939e-11 1.4865e-07 2.1847e-07 0:00:28 840
1161 6.4968e-08 2.6773e-08 1.8737e-08 3.4661e-08 8.0290e-11 1.4711e-07 2.1545e-07 0:00:23 839
1162 6.4441e-08 2.6070e-08 1.8316e-08 3.3490e-08 7.9372e-11 1.4474e-07 2.1105e-07 0:00:18 838
1163 6.3814e-08 2.5208e-08 1.7813e-08 3.2271e-08 7.8146e-11 1.4149e-07 2.0549e-07 0:00:14 837
1164 6.2946e-08 2.4200e-08 1.7257e-08 3.1124e-08 7.6620e-11 1.3757e-07 1.9829e-07 0:00:12 836
1165 6.1816e-08 2.3082e-08 1.6667e-08 3.0153e-08 7.4964e-11 1.3290e-07 1.8981e-07 0:00:09 835
1166 6.0503e-08 2.1902e-08 1.6047e-08 2.9398e-08 7.3138e-11 1.2742e-07 1.8025e-07 0:00:07 834

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1167 5.9195e-08 2.0675e-08 1.5433e-08 2.8878e-08 7.1122e-11 1.2112e-07 1.6959e-07 0:00:06 833
1168 5.7762e-08 1.9445e-08 1.4841e-08 2.8597e-08 6.9093e-11 1.1429e-07 1.5836e-07 0:00:05 832
1169 5.6268e-08 1.8377e-08 1.4324e-08 2.8466e-08 6.7029e-11 1.0733e-07 1.4655e-07 0:00:04 831
1170 5.4553e-08 1.7489e-08 1.3867e-08 2.8467e-08 6.5101e-11 1.0029e-07 1.3509e-07 0:00:03 830
1171 5.2793e-08 1.6830e-08 1.3482e-08 2.8494e-08 6.3205e-11 9.3357e-08 1.2380e-07 0:00:02 829
1172 5.1043e-08 1.6311e-08 1.3173e-08 2.8575e-08 6.1322e-11 8.7098e-08 1.1348e-07 0:02:48 828
1173 4.9521e-08 1.5957e-08 1.2901e-08 2.8630e-08 5.9280e-11 8.1956e-08 1.0607e-07 0:02:14 827
1174 4.7968e-08 1.5766e-08 1.2678e-08 2.8622e-08 5.7343e-11 7.8776e-08 1.0448e-07 0:01:47 826
1175 4.6335e-08 1.5703e-08 1.2467e-08 2.8525e-08 5.5867e-11 7.7748e-08 1.0664e-07 0:01:25 825
1176 4.4809e-08 1.5678e-08 1.2265e-08 2.8375e-08 5.4992e-11 7.8290e-08 1.1058e-07 0:01:08 824
1177 4.3358e-08 1.5732e-08 1.2127e-08 2.8146e-08 5.4660e-11 7.9997e-08 1.1536e-07 0:00:55 823

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

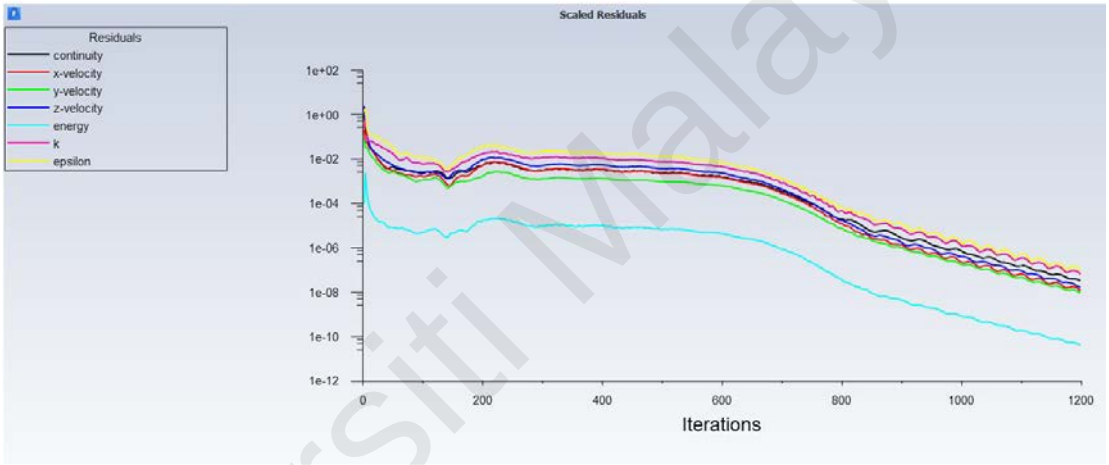
1178 4.2004e-08 1.5908e-08 1.2103e-08 2.7880e-08 5.4530e-11 8.2300e-08 1.2051e-07 0:00:44 822
1179 4.1027e-08 1.6161e-08 1.2137e-08 2.7593e-08 5.4583e-11 8.4716e-08 1.2536e-07 0:00:35 821
1180 4.0335e-08 1.6478e-08 1.2243e-08 2.7293e-08 5.4768e-11 8.6988e-08 1.2982e-07 0:00:28 820
1181 3.9870e-08 1.6853e-08 1.2384e-08 2.6968e-08 5.5088e-11 8.9035e-08 1.3342e-07 0:00:22 819
1182 3.9510e-08 1.7197e-08 1.2522e-08 2.6618e-08 5.5243e-11 9.0671e-08 1.3632e-07 0:00:18 818
1183 3.9465e-08 1.7542e-08 1.2664e-08 2.6205e-08 5.5245e-11 9.1969e-08 1.3886e-07 0:00:14 817
1184 3.9522e-08 1.7803e-08 1.2780e-08 2.5707e-08 5.5115e-11 9.2858e-08 1.4095e-07 0:00:11 816
1185 3.9711e-08 1.7961e-08 1.2829e-08 2.5121e-08 5.4854e-11 9.3345e-08 1.4239e-07 0:00:09 815
1186 3.9802e-08 1.7978e-08 1.2808e-08 2.4447e-08 5.4553e-11 9.3795e-08 1.4344e-07 0:00:07 814
1187 3.9858e-08 1.7859e-08 1.2724e-08 2.3686e-08 5.4116e-11 9.3917e-08 1.4406e-07 0:00:06 813
1188 3.9851e-08 1.7629e-08 1.2572e-08 2.2863e-08 5.3698e-11 9.3609e-08 1.4372e-07 0:00:05 812

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter
1189 3.9626e-08 1.7308e-08 1.2369e-08 2.2003e-08 5.3199e-11 9.2809e-08 1.4228e-07 0:00:04 811
1190 3.9221e-08 1.6934e-08 1.2114e-08 2.1131e-08 5.2547e-11 9.1488e-08 1.3981e-07 0:00:03 810
1191 3.8699e-08 1.6459e-08 1.1816e-08 2.0279e-08 5.1722e-11 8.9632e-08 1.3647e-07 0:00:02 809
1192 3.8187e-08 1.5889e-08 1.1478e-08 1.9499e-08 5.0769e-11 8.7242e-08 1.3232e-07 0:00:02 808
1193 3.7591e-08 1.5238e-08 1.1109e-08 1.8817e-08 4.9666e-11 8.4520e-08 1.2758e-07 0:02:43 807
1194 3.6928e-08 1.4549e-08 1.0749e-08 1.8271e-08 4.8460e-11 8.1464e-08 1.2207e-07 0:02:10 806
1195 3.6199e-08 1.3810e-08 1.0383e-08 1.7826e-08 4.7163e-11 7.8019e-08 1.1602e-07 0:01:44 805
1196 3.5427e-08 1.3074e-08 1.0025e-08 1.7575e-08 4.5810e-11 7.4168e-08 1.0928e-07 0:01:23 804
1197 3.4602e-08 1.2376e-08 9.6778e-09 1.7457e-08 4.4410e-11 6.9948e-08 1.0208e-07 0:01:06 803
! 1198 solution is converged
1198 3.3689e-08 1.1712e-08 9.3646e-09 1.7454e-08 4.3051e-11 6.5645e-08 9.4885e-08 0:00:53 802
Writing data to D:\2. UM - 2nd Sem\KQE 7001 - Research Project\. ANSYS Case\Case1\Case1-Test_files\dp0\FLU-2\Fluent\SYS.ip ...
x-coord
y-coord
z-coord
pressure
x-velocity

y-velocity
z-velocity
temperature
k
epsilon
Done.

Calculation complete.

ANSYS Residuals – Oil (Case 1)



APPENDIX C – CASE 2 ANSYS SETUP, ITERATION, AND RESIDUALS FOR WATER

ANSYS Setup – Water (Case 2)

3570 hexahedral cells, zone 4, binary.
3570 cell partition ids, zone 4, 7 partitions, binary.
8950 quadrilateral interior faces, zone 1, binary.
2312 quadrilateral wall faces, zone 5, binary.
9 quadrilateral velocity-inlet faces, zone 6, binary.
9 quadrilateral pressure-outlet faces, zone 7, binary.
1190 quadrilateral wall faces, zone 8, binary.
5524 nodes, binary.
5524 node flags, binary.

Building...
mesh
distributing mesh
parts.....,
faces.....,
nodes.....,
cells.....,
bandwidth reduction using Reverse Cuthill-McKee: 243/34 = 7.14706
materials,
interface,
domains,
mixture
zones,
heat
outlet
inlet
wall-fluid
interior-fluid
fluidSetting fluid (mixture) ... Done.
Setting zone id of fluid to 4.
Setting zone id of interior-fluid to 1.
Setting zone id of wall-fluid to 5.
Setting zone id of inlet to 6.
Setting zone id of outlet to 7.
Setting zone id of heat to 8.
Done.
Setting fluid (mixture) ... Done.
Setting inlet (mixture) (zone type changed to mass-flow-inlet) ... Done.
Setting interior-fluid (mixture) ... Done.
Setting wall-fluid (mixture) ... Done.
Setting outlet (mixture) ... Done.
Setting heat (mixture) ... Done.

parallel,
Done.

Preparing mesh for display...
Done.

Setting Post Processing and Surfaces information ... Done.
Information: Converting parameter Tf to report definition.
Information: Converting parameter Tout to report definition.
Information: Converting parameter Vout to report definition.
Information: Converting parameter Pd to report definition.

ANSYS Iteration – Water (Case 2)

writing rp variables ... Done.

writing domain variables ... Done.

writing fluid (type fluid) (mixture) ... Done.

writing inlet (type mass-flow-inlet) (mixture) ... Done.

writing interior-fluid (type interior) (mixture) ... Done.

writing wall-fluid (type wall) (mixture) ... Done.

writing outlet (type pressure-outlet) (mixture) ... Done.

writing heat (type wall) (mixture) ... Done.

writing zones map name-id ... Done.

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

1 1.0000e+00 1.3610e-07 1.7058e-07 8.9231e-04 5.8626e-05 4.9839e-01 6.0352e-01 0:00:00 1999

2 1.0000e+00 1.2060e-01 5.1776e-02 1.0181e+00 7.1677e-05 1.7395e-01 4.9407e-01 0:00:00 1998

3 2.9574e-01 4.1063e-02 1.8032e-02 1.2943e-01 7.3541e-05 4.8213e-02 4.6652e-01 0:00:00 1997

Reversed flow on 1 face (10.6% area) of pressure-outlet 7.

4 1.7418e-01 3.4830e-02 2.0119e-02 1.3271e-01 9.9569e-05 4.4105e-02 4.4925e-01 0:00:00 1996

5 1.8659e-01 4.1632e-02 2.7187e-02 1.5461e-01 8.0475e-05 4.2157e-02 4.0820e-01 0:00:00 1995

6 1.5104e-01 3.5296e-02 2.0612e-02 8.3915e-02 8.0283e-05 4.1174e-02 3.6490e-01 0:00:00 1994

7 1.1235e-01 2.7212e-02 1.6197e-02 4.9965e-02 7.0539e-05 3.8291e-02 2.5334e-01 0:00:00 1993

8 7.7422e-02 2.2284e-02 1.3037e-02 3.3852e-02 5.5809e-05 3.8789e-02 2.1382e-01 0:00:00 1992

9 5.9055e-02 1.7825e-02 1.0941e-02 2.7032e-02 4.9087e-05 3.5787e-02 1.5677e-01 0:00:00 1991

10 4.7313e-02 1.3899e-02 8.8627e-03 2.2146e-02 3.8404e-05 3.1330e-02 1.1706e-01 0:00:00 1990

11 3.8716e-02 1.1155e-02 7.6548e-03 1.8452e-02 3.1323e-05 2.7973e-02 9.2926e-02 0:00:00 1989

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

12 3.4013e-02 9.0252e-03 6.6164e-03 1.5690e-02 2.7008e-05 2.6626e-02 8.6144e-02 0:00:00 1988

13 2.8074e-02 7.3718e-03 5.5562e-03 1.4066e-02 2.2447e-05 2.6125e-02 8.0304e-02 0:33:07 1987

14 2.3737e-02 6.1340e-03 4.8431e-03 1.2647e-02 1.8578e-05 2.5448e-02 7.5372e-02 0:26:29 1986

15 2.0867e-02 5.3094e-03 4.4056e-03 1.1421e-02 1.6174e-05 2.4884e-02 7.1480e-02 0:21:10 1985

16 1.8696e-02 4.6501e-03 4.1279e-03 1.0573e-02 1.4691e-05 2.4945e-02 7.0253e-02 0:16:56 1984

17 1.8063e-02 3.9873e-03 3.8447e-03 9.7927e-03 1.4069e-05 2.4627e-02 6.5936e-02 0:13:32 1983

18 1.5530e-02 3.5703e-03 3.5753e-03 9.1066e-03 1.4362e-05 2.4993e-02 6.5471e-02 0:10:49 1982

19 1.5217e-02 3.3195e-03 3.3230e-03 8.6706e-03 1.4540e-05 2.5751e-02 6.5268e-02 0:08:39 1981

20 1.2855e-02 3.1210e-03 3.1493e-03 8.1499e-03 1.4637e-05 2.6360e-02 6.4134e-02 0:06:55 1980

21 1.2666e-02 2.9773e-03 2.9709e-03 7.8852e-03 1.5032e-05 2.6375e-02 6.1534e-02 0:05:32 1979

22 1.1198e-02 2.7963e-03 2.8370e-03 7.4726e-03 1.5591e-05 2.5717e-02 5.6325e-02 0:04:25 1978

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

23 1.0769e-02 2.6639e-03 2.7224e-03 7.3558e-03 1.6161e-05 2.5060e-02 5.1722e-02 0:03:32 1977

24 1.0151e-02 2.5527e-03 2.6088e-03 7.2244e-03 1.6654e-05 2.4359e-02 4.8600e-02 0:02:50 1976

25 9.8002e-03 2.4789e-03 2.4982e-03 7.1172e-03 1.6881e-05 2.3532e-02 4.5844e-02 0:02:16 1975

26 9.7122e-03 2.3890e-03 2.3770e-03 7.0147e-03 1.6966e-05 2.2459e-02 4.3295e-02 0:01:49 1974

27 8.8171e-03 2.3245e-03 2.2907e-03 6.9031e-03 1.7302e-05 2.1673e-02 4.1554e-02 0:01:27 1973

28 8.3985e-03 2.2671e-03 2.2126e-03 6.8488e-03 1.7839e-05 2.0744e-02 3.9855e-02 0:01:09 1972

29 7.9710e-03 2.2138e-03 2.1190e-03 6.7885e-03 1.7975e-05 1.9751e-02 3.8166e-02 0:00:55 1971

30 7.6227e-03 2.1726e-03 2.0502e-03 6.6635e-03 1.8358e-05 1.8858e-02 3.6666e-02 0:00:44 1970

31 7.4820e-03 2.1732e-03 2.0085e-03 6.5741e-03 1.9111e-05 1.8128e-02 3.5173e-02 0:00:35 1969

32 7.5372e-03 2.1946e-03 2.0107e-03 6.5196e-03 1.9531e-05 1.7645e-02 3.4504e-02 0:00:28 1968

33 7.7008e-03 2.2348e-03 2.0349e-03 6.4682e-03 1.9730e-05 1.7239e-02 3.3556e-02 0:00:23 1967

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

34 7.9568e-03 2.3003e-03 2.0895e-03 6.3943e-03 1.9881e-05 1.6795e-02 3.2526e-02 0:00:18 1966

35 8.3577e-03 2.3594e-03 2.1421e-03 6.3084e-03 2.0063e-05 1.6542e-02 3.1663e-02 0:00:14 1965

36 8.9076e-03 2.3947e-03 2.1891e-03 6.2016e-03 1.9840e-05 1.6047e-02 3.0097e-02 0:00:12 1964

37 8.5469e-03 2.3905e-03 2.2350e-03 6.1391e-03 1.9617e-05 1.5587e-02 2.8865e-02 0:00:09 1963

38 8.7470e-03 2.3443e-03 2.2377e-03 6.0664e-03 1.8629e-05 1.4784e-02 2.6898e-02 0:00:07 1962

39 8.4124e-03 2.3091e-03 2.1871e-03 5.9694e-03 1.7645e-05 1.4008e-02 2.5622e-02 0:06:38 1961

40 7.6494e-03 2.2730e-03 2.1084e-03 5.8589e-03 1.7421e-05 1.3694e-02 2.5792e-02 0:05:18 1960

41 7.6253e-03 2.2044e-03 1.9944e-03 5.7285e-03 1.6948e-05 1.3198e-02 2.5508e-02 0:04:15 1959

42 7.0611e-03 2.1100e-03 1.8619e-03 5.5810e-03 1.6390e-05 1.2693e-02 2.4975e-02 0:03:24 1958

43 6.1989e-03 2.0028e-03 1.7345e-03 5.4306e-03 1.5123e-05 1.2211e-02 2.4140e-02 0:02:43 1957

44 6.0386e-03 1.8594e-03 1.6066e-03 5.2394e-03 1.4567e-05 1.1641e-02 2.2899e-02 0:02:10 1956

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

45 5.4149e-03 1.7365e-03 1.4979e-03 5.0210e-03 1.4750e-05 1.1183e-02 2.1840e-02 0:01:44 1955

46 5.2927e-03 1.6163e-03 1.4134e-03 4.8872e-03 1.4892e-05 1.0690e-02 2.0747e-02 0:01:23 1954

47 5.2692e-03 1.5188e-03 1.3582e-03 4.7498e-03 1.4495e-05 1.0260e-02 1.9725e-02 0:01:07 1953

48 5.3008e-03 1.4648e-03 1.3194e-03 4.6402e-03 1.4018e-05 9.9028e-03 1.8823e-02 0:00:53 1952

49 5.3589e-03 1.4033e-03 1.2876e-03 4.5463e-03 1.3895e-05 9.6096e-03 1.8113e-02 0:00:43 1951

50 5.3472e-03 1.3721e-03 1.2635e-03 4.4750e-03 1.3950e-05 9.3782e-03 1.7575e-02 0:00:34 1950

51 5.2228e-03 1.3515e-03 1.2417e-03 4.4187e-03 1.4095e-05 9.1095e-03 1.7026e-02 0:00:27 1949

52 5.1326e-03 1.3321e-03 1.2216e-03 4.3651e-03 1.4377e-05 8.9207e-03 1.6836e-02 0:00:22 1948

53 5.1055e-03 1.3265e-03 1.2159e-03 4.3213e-03 1.4385e-05 8.8533e-03 1.6973e-02 0:00:17 1947

54 5.2471e-03 1.3302e-03 1.2207e-03 4.2893e-03 1.4581e-05 8.7938e-03 1.7017e-02 0:00:14 1946

55 5.2620e-03 1.3368e-03 1.2324e-03 4.2630e-03 1.5068e-05 8.6159e-03 1.6679e-02 0:00:11 1945

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

56 5.3553e-03 1.3486e-03 1.2695e-03 4.2512e-03 1.4885e-05 8.4385e-03 1.6366e-02 0:00:09 1944

57 5.5703e-03 1.3746e-03 1.3060e-03 4.2333e-03 1.4960e-05 8.3560e-03 1.5905e-02 0:00:07 1943

58 5.6616e-03 1.4056e-03 1.3304e-03 4.2258e-03 1.5192e-05 8.1964e-03 1.5330e-02 0:00:06 1942

59 5.8884e-03 1.4121e-03 1.3682e-03 4.2167e-03 1.4898e-05 8.1609e-03 1.5082e-02 0:00:05 1941

60 5.9495e-03 1.4482e-03 1.4290e-03 4.1972e-03 1.5136e-05 8.3614e-03 1.5463e-02 0:00:04 1940

61 5.8832e-03 1.4708e-03 1.4719e-03 4.1630e-03 1.5205e-05 8.6223e-03 1.6151e-02 0:00:03 1939

62 6.0229e-03 1.4823e-03 1.5033e-03 4.1346e-03 1.4907e-05 9.0878e-03 1.7636e-02 0:00:02 1938

63 5.6665e-03 1.4940e-03 1.5443e-03 4.0957e-03 1.4939e-05 9.2863e-03 1.8510e-02 0:06:29 1937

64 5.8660e-03 1.5327e-03 1.5654e-03 4.0745e-03 1.4403e-05 9.5399e-03 1.9598e-02 0:05:11 1936

65 5.6057e-03 1.5750e-03 1.5674e-03 4.0059e-03 1.3805e-05 9.6747e-03 2.0393e-02 0:04:09 1935

66 5.7184e-03 1.6154e-03 1.5687e-03 3.9352e-03 1.2960e-05 1.0037e-02 2.1782e-02 0:03:19 1934

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

67 5.6331e-03 1.6565e-03 1.6052e-03 3.8679e-03 1.2158e-05 1.0421e-02 2.3558e-02 0:02:39 1933

68 5.4188e-03 1.7072e-03 1.6557e-03 3.7866e-03 1.0876e-05 1.0562e-02 2.4210e-02 0:02:07 1932

69 5.5049e-03 1.7437e-03 1.6667e-03 3.7199e-03 9.7840e-06 1.0407e-02 2.3480e-02 0:01:42 1931

70 5.4708e-03 1.7479e-03 1.6819e-03 3.6380e-03 8.8719e-06 1.0129e-02 2.2344e-02 0:01:21 1930

71 5.3140e-03 1.7099e-03 1.6986e-03 3.5673e-03 8.1134e-06 9.4730e-03 2.0283e-02 0:01:05 1929

72 5.1754e-03 1.6914e-03 1.7067e-03 3.5864e-03 7.7842e-06 8.3921e-03 1.6881e-02 0:00:52 1928

73 5.0482e-03 1.6399e-03 1.6509e-03 3.5813e-03 7.0328e-06 7.5749e-03 1.4299e-02 0:00:42 1927

74 4.8751e-03 1.5907e-03 1.5814e-03 3.6034e-03 6.0669e-06 7.4925e-03 1.3949e-02 0:00:33 1926

75 4.7963e-03 1.5536e-03 1.4953e-03 3.6076e-03 5.3584e-06 8.1767e-03 1.6130e-02 0:00:27 1925

76 4.6488e-03 1.5084e-03 1.4006e-03 3.6024e-03 4.8510e-06 9.1278e-03 1.9645e-02 0:00:21 1924

77 4.5422e-03 1.4569e-03 1.3163e-03 3.5749e-03 4.6786e-06 9.8327e-03 2.2646e-02 0:00:17 1923

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

78 4.4345e-03 1.4065e-03 1.2490e-03 3.5685e-03 4.7855e-06 1.0108e-02 2.3940e-02 0:00:14 1922

79 4.3314e-03 1.3513e-03 1.1996e-03 3.5317e-03 4.8055e-06 9.9012e-03 2.3368e-02 0:00:11 1921

80 4.2699e-03 1.2978e-03 1.1492e-03 3.4835e-03 4.8332e-06 9.4349e-03 2.1568e-02 0:00:09 1920

81 4.1388e-03 1.2560e-03 1.0992e-03 3.4416e-03 5.1029e-06 8.7881e-03 1.9001e-02 0:00:07 1919

82 3.9702e-03 1.2082e-03 1.0410e-03 3.3727e-03 5.1089e-06 8.0057e-03 1.6227e-02 0:00:06 1918

83 3.8285e-03 1.1642e-03 9.9406e-04 3.2774e-03 5.1119e-06 7.2369e-03 1.3606e-02 0:00:04 1917

84 3.6756e-03 1.1132e-03 9.4084e-04 3.1666e-03 5.1146e-06 6.5169e-03 1.1515e-02 0:00:04 1916

85 3.4934e-03 1.0581e-03 8.8789e-04 3.0402e-03 5.1116e-06 5.9363e-03 1.0112e-02 0:00:03 1915

86 3.2810e-03 1.0063e-03 8.3733e-04 2.9049e-03 4.9798e-06 5.5047e-03 9.3656e-03 0:00:02 1914

87 3.0742e-03 9.5080e-04 7.8311e-04 2.7631e-03 4.7034e-06 5.2001e-03 9.0004e-03 0:00:02 1913

88 2.7820e-03 8.9499e-04 7.3109e-04 2.6101e-03 4.3632e-06 4.9939e-03 8.9493e-03 0:06:24 1912

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

89 2.5598e-03 8.3712e-04 6.8004e-04 2.4610e-03 4.1540e-06 4.9382e-03 9.2573e-03 0:05:07 1911

90 2.3541e-03 7.8395e-04 6.3983e-04 2.3208e-03 3.9535e-06 4.8773e-03 9.4875e-03 0:04:05 1910

91 2.1921e-03 7.4100e-04 6.0919e-04 2.1863e-03 3.7592e-06 4.8108e-03 9.5753e-03 0:03:16 1909

92 2.1106e-03 7.0506e-04 5.8726e-04 2.0654e-03 3.6496e-06 4.7513e-03 9.6038e-03 0:02:37 1908

93 2.0411e-03 6.7708e-04 5.7491e-04 1.9501e-03 3.6205e-06 4.6943e-03 9.5697e-03 0:02:05 1907

94 1.9855e-03 6.5007e-04 5.6615e-04 1.8372e-03 3.5620e-06 4.6004e-03 9.3744e-03 0:01:40 1906

95 1.9706e-03 6.2768e-04 5.5425e-04 1.7326e-03 3.7065e-06 4.4686e-03 9.0235e-03 0:01:20 1905

96 1.9060e-03 6.0049e-04 5.4111e-04 1.6402e-03 3.7433e-06 4.3029e-03 8.5712e-03 0:01:04 1904

97 1.8367e-03 5.7833e-04 5.2501e-04 1.5531e-03 3.7162e-06 4.1341e-03 8.0874e-03 0:00:51 1903

98 1.7751e-03 5.6140e-04 5.1561e-04 1.4765e-03 3.4887e-06 3.9327e-03 7.5121e-03 0:00:41 1902

99 1.7198e-03 5.4424e-04 5.0606e-04 1.4042e-03 3.3515e-06 3.6668e-03 6.7908e-03 0:00:33 1901

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

100 1.6724e-03 5.2883e-04 4.9312e-04 1.3319e-03 3.3005e-06 3.4211e-03 6.2111e-03 0:00:26 1900

101 1.6114e-03 4.9820e-04 4.7435e-04 1.2590e-03 2.9967e-06 3.1782e-03 5.6974e-03 0:00:21 1899

102 1.5379e-03 4.5876e-04 4.4741e-04 1.1802e-03 2.6385e-06 2.9143e-03 5.2241e-03 0:00:17 1898

103 1.4327e-03 4.3371e-04 4.3004e-04 1.1022e-03 2.5489e-06 2.6628e-03 4.7764e-03 0:00:13 1897

104 1.3272e-03 4.0431e-04 4.1095e-04 1.0195e-03 2.4352e-06 2.4116e-03 4.3406e-03 0:00:11 1896

105 1.2493e-03 3.8060e-04 3.9187e-04 9.4211e-04 2.1892e-06 2.1831e-03 3.9358e-03 0:00:09 1895

106 1.2015e-03 3.5594e-04 3.7582e-04 8.7783e-04 1.9564e-06 1.9567e-03 3.4844e-03 0:00:07 1894

107 1.1384e-03 3.3231e-04 3.6648e-04 8.0779e-04 1.8282e-06 1.7507e-03 3.0723e-03 0:00:05 1893

108 1.0814e-03 3.0725e-04 3.4960e-04 7.4737e-04 1.7053e-06 1.5629e-03 2.7232e-03 0:00:04 1892

109 1.0565e-03 2.8127e-04 3.2446e-04 6.9607e-04 1.5740e-06 1.4068e-03 2.4412e-03 0:00:04 1891

110 9.9615e-04 2.6038e-04 2.9777e-04 6.3666e-04 1.4439e-06 1.2697e-03 2.2056e-03 0:00:03 1890

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

111 9.2681e-04 2.4285e-04 2.7486e-04 5.7328e-04 1.3704e-06 1.1606e-03 2.0278e-03 0:00:02 1889

112 8.5127e-04 2.2568e-04 2.5415e-04 5.1391e-04 1.2955e-06 1.0753e-03 1.9077e-03 0:00:02 1888

113 7.8091e-04 2.0863e-04 2.3136e-04 4.6535e-04 1.2068e-06 1.0049e-03 1.8115e-03 0:00:01 1887

114 7.2340e-04 1.9173e-04 2.0650e-04 4.1741e-04 1.1503e-06 9.4672e-04 1.7432e-03 0:00:01 1886

115 6.7027e-04 1.7361e-04 1.8336e-04 3.7144e-04 1.0591e-06 8.8979e-04 1.6672e-03 0:00:01 1885

116 6.1353e-04 1.5379e-04 1.6137e-04 3.3053e-04 9.6100e-07 8.3435e-04 1.5764e-03 0:06:18 1884

117 5.5233e-04 1.3484e-04 1.4018e-04 2.9292e-04 8.5645e-07 7.7831e-04 1.4654e-03 0:05:02 1883

118 4.9566e-04 1.1732e-04 1.2110e-04 2.6279e-04 8.0866e-07 7.2065e-04 1.3535e-03 0:04:01 1882

119 4.4656e-04 1.0138e-04 1.0393e-04 2.3569e-04 7.6716e-07 6.6680e-04 1.2401e-03 0:03:13 1881

120 4.0090e-04 8.8369e-05 8.9791e-05 2.1424e-04 7.2856e-07 6.1285e-04 1.1149e-03 0:02:34 1880

121 3.6440e-04 7.8135e-05 7.8945e-05 1.9619e-04 6.9246e-07 5.5957e-04 9.9151e-04 0:02:03 1879

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

122 3.3369e-04 7.0192e-05 7.0434e-05 1.8035e-04 6.0631e-07 5.1243e-04 8.8697e-04 0:01:39 1878

123 3.0802e-04 6.3735e-05 6.3292e-05 1.6624e-04 5.4533e-07 4.7397e-04 8.1704e-04 0:01:19 1877

124 2.8469e-04 5.8965e-05 5.7975e-05 1.5345e-04 4.9790e-07 4.4226e-04 7.5938e-04 0:01:03 1876

125 2.6402e-04 5.5317e-05 5.3920e-05 1.4229e-04 4.9358e-07 4.1405e-04 7.1786e-04 0:00:50 1875

126 2.4421e-04 5.2107e-05 5.0662e-05 1.3241e-04 4.7832e-07 3.9080e-04 6.9139e-04 0:00:40 1874

127 2.2743e-04 4.9403e-05 4.8454e-05 1.2392e-04 4.6555e-07 3.7107e-04 6.7195e-04 0:00:32 1873

128 2.1528e-04 4.6875e-05 4.6370e-05 1.1597e-04 4.5871e-07 3.5792e-04 6.7017e-04 0:00:26 1872

129 2.0419e-04 4.4546e-05 4.4246e-05 1.0851e-04 4.5626e-07 3.4741e-04 6.7479e-04 0:00:21 1871

130 1.9402e-04 4.2120e-05 4.2142e-05 1.0216e-04 4.2758e-07 3.4119e-04 6.8449e-04 0:00:16 1870

131 1.8471e-04 3.9725e-05 4.0067e-05 9.5855e-05 4.0522e-07 3.3559e-04 6.8942e-04 0:00:13 1869

132 1.7671e-04 3.7176e-05 3.7879e-05 8.9933e-05 3.7300e-07 3.2939e-04 6.8771e-04 0:00:11 1868

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

133 1.6821e-04 3.4499e-05 3.5684e-05 8.4133e-05 3.3527e-07 3.2057e-04 6.7278e-04 0:00:08 1867

134 1.5880e-04 3.1806e-05 3.3470e-05 7.8265e-05 2.9314e-07 3.0779e-04 6.4448e-04 0:00:07 1866

135 1.4915e-04 2.9092e-05 3.1295e-05 7.2899e-05 2.5028e-07 2.9273e-04 6.0622e-04 0:00:05 1865

136 1.3846e-04 2.6533e-05 2.9043e-05 6.7926e-05 2.1191e-07 2.7454e-04 5.5985e-04 0:00:04 1864

137 1.2690e-04 2.4161e-05 2.6815e-05 6.3487e-05 1.7926e-07 2.5410e-04 5.0716e-04 0:00:03 1863

138 1.1504e-04 2.2054e-05 2.4693e-05 5.9601e-05 1.5054e-07 2.3201e-04 4.5351e-04 0:00:03 1862

139 1.0418e-04 2.0464e-05 2.2942e-05 5.6388e-05 1.2879e-07 2.0955e-04 4.0181e-04 0:00:02 1861

140 9.5509e-05 1.9266e-05 2.1515e-05 5.3766e-05 1.2022e-07 1.8868e-04 3.5400e-04 0:00:02 1860

141 9.0014e-05 1.8297e-05 2.0330e-05 5.1295e-05 1.2197e-07 1.7072e-04 3.1486e-04 0:06:13 1859

142 8.5536e-05 1.7395e-05 1.9431e-05 4.8753e-05 1.2171e-07 1.5529e-04 2.8290e-04 0:04:58 1858

143 8.2289e-05 1.6646e-05 1.8698e-05 4.6494e-05 1.2015e-07 1.4181e-04 2.5853e-04 0:03:59 1857

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

144 7.9336e-05 1.5924e-05 1.8079e-05 4.4368e-05 1.1571e-07 1.3121e-04 2.4246e-04 0:03:11 1856

145 7.6199e-05 1.5189e-05 1.7474e-05 4.2289e-05 1.1026e-07 1.2193e-04 2.2884e-04 0:02:33 1855

146 7.2917e-05 1.4498e-05 1.6849e-05 4.0241e-05 1.0228e-07 1.1396e-04 2.1585e-04 0:02:02 1854

147 6.9292e-05 1.3740e-05 1.6139e-05 3.8333e-05 9.3280e-08 1.0624e-04 2.0149e-04 0:01:38 1853

148 6.5200e-05 1.2966e-05 1.5324e-05 3.6495e-05 8.3696e-08 9.7405e-05 1.8515e-04 0:01:18 1852

149 6.0957e-05 1.2235e-05 1.4456e-05 3.4815e-05 7.5507e-08 8.8747e-05 1.6718e-04 0:01:02 1851

150 5.6613e-05 1.1593e-05 1.3663e-05 3.3190e-05 6.3993e-08 8.0537e-05 1.4983e-04 0:00:50 1850

151 5.2175e-05 1.1065e-05 1.2932e-05 3.1719e-05 5.8165e-08 7.3150e-05 1.3442e-04 0:00:40 1849

152 4.8246e-05 1.0620e-05 1.2329e-05 3.0352e-05 5.8172e-08 6.7088e-05 1.2365e-04 0:00:32 1848

153 4.5527e-05 1.0276e-05 1.1803e-05 2.9357e-05 6.0513e-08 6.2519e-05 1.1653e-04 0:00:25 1847

154 4.3780e-05 9.9911e-06 1.1341e-05 2.8431e-05 5.9991e-08 5.9860e-05 1.1089e-04 0:00:20 1846

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

155 4.2615e-05 9.7482e-06 1.0957e-05 2.7501e-05 6.0928e-08 5.8223e-05 1.0838e-04 0:00:16 1845

156 4.1995e-05 9.5416e-06 1.0627e-05 2.6603e-05 6.1155e-08 5.5974e-05 1.0520e-04 0:00:13 1844

157 4.1625e-05 9.3496e-06 1.0291e-05 2.5679e-05 5.9773e-08 5.3241e-05 9.9510e-05 0:00:10 1843

158 4.1077e-05 9.1347e-06 9.9336e-06 2.4747e-05 5.8912e-08 4.9715e-05 9.2351e-05 0:00:08 1842

159 4.0316e-05 8.9120e-06 9.5968e-06 2.3813e-05 5.5902e-08 4.5765e-05 8.4612e-05 0:00:07 1841

160 3.9389e-05 8.6687e-06 9.2354e-06 2.2829e-05 5.3278e-08 4.3013e-05 8.0098e-05 0:00:05 1840

161 3.8102e-05 8.3890e-06 8.8349e-06 2.1816e-05 4.4911e-08 4.2941e-05 8.1903e-05 0:00:04 1839

162 3.6561e-05 8.0806e-06 8.4209e-06 2.0764e-05 4.0885e-08 4.4761e-05 8.8406e-05 0:00:03 1838

163 3.4849e-05 7.7921e-06 8.0090e-06 1.9755e-05 3.6025e-08 4.7241e-05 9.5856e-05 0:00:03 1837

164 3.3082e-05 7.5036e-06 7.5902e-06 1.8754e-05 3.3733e-08 5.0223e-05 1.0370e-04 0:00:02 1836

165 3.1491e-05 7.2103e-06 7.2035e-06 1.7817e-05 3.2181e-08 5.3290e-05 1.1148e-04 0:06:09 1835

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

166 3.0192e-05 6.9305e-06 6.8394e-06 1.6961e-05 3.3840e-08 5.6187e-05 1.1729e-04 0:04:55 1834

167 2.9098e-05 6.6607e-06 6.5243e-06 1.6173e-05 3.5984e-08 5.8370e-05 1.2051e-04 0:03:56 1833

168 2.8256e-05 6.4222e-06 6.2694e-06 1.5467e-05 3.7898e-08 5.9405e-05 1.2087e-04 0:03:08 1832

169 2.7607e-05 6.1975e-06 6.0592e-06 1.4899e-05 3.6922e-08 5.9072e-05 1.1850e-04 0:02:31 1831

170 2.7125e-05 6.0228e-06 5.9334e-06 1.4519e-05 3.7965e-08 5.7506e-05 1.1376e-04 0:02:00 1830

171 2.6820e-05 5.9229e-06 5.8847e-06 1.4308e-05 3.8512e-08 5.4996e-05 1.0737e-04 0:01:36 1829

172 2.6899e-05 5.8830e-06 5.8729e-06 1.4173e-05 3.8457e-08 5.1674e-05 9.9497e-05 0:01:17 1828

173 2.7136e-05 5.8878e-06 5.9046e-06 1.4091e-05 3.8691e-08 4.7818e-05 9.0797e-05 0:01:02 1827

174 2.7387e-05 5.9147e-06 5.9449e-06 1.3992e-05 3.8807e-08 4.3656e-05 8.1948e-05 0:00:49 1826

175 2.7683e-05 5.9491e-06 5.9996e-06 1.3890e-05 3.5922e-08 3.9421e-05 7.3223e-05 0:00:39 1825

176 2.7996e-05 5.9795e-06 6.0527e-06 1.3781e-05 3.5397e-08 3.5315e-05 6.4898e-05 0:00:31 1824

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

177 2.8258e-05 6.0125e-06 6.0837e-06 1.3678e-05 3.4642e-08 3.1720e-05 5.7862e-05 0:00:25 1823

178 2.8443e-05 6.0306e-06 6.0952e-06 1.3584e-05 3.4034e-08 2.8542e-05 5.1954e-05 0:00:20 1822

179 2.8561e-05 6.0264e-06 6.0920e-06 1.3515e-05 3.1036e-08 2.5925e-05 4.7129e-05 0:00:16 1821

180 2.8650e-05 6.0084e-06 6.0771e-06 1.3453e-05 3.0642e-08 2.3960e-05 4.3942e-05 0:00:13 1820

181 2.8692e-05 6.0070e-06 6.0819e-06 1.3420e-05 2.9745e-08 2.2571e-05 4.1808e-05 0:00:10 1819

182 2.8759e-05 6.0058e-06 6.0912e-06 1.3423e-05 2.9376e-08 2.1822e-05 4.1424e-05 0:00:08 1818

183 2.8862e-05 6.0016e-06 6.1129e-06 1.3439e-05 2.7159e-08 2.1624e-05 4.2127e-05 0:00:07 1817

184 2.9055e-05 6.0211e-06 6.1460e-06 1.3483e-05 2.7108e-08 2.1707e-05 4.2993e-05 0:00:05 1816

185 2.9434e-05 6.0792e-06 6.2066e-06 1.3576e-05 2.6736e-08 2.2088e-05 4.4261e-05 0:00:04 1815

186 2.9962e-05 6.1686e-06 6.2997e-06 1.3709e-05 2.7056e-08 2.2771e-05 4.5949e-05 0:00:03 1814

187 3.0604e-05 6.2852e-06 6.4275e-06 1.3864e-05 2.5813e-08 2.3626e-05 4.7741e-05 0:00:03 1813

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

188 3.1457e-05 6.4320e-06 6.5901e-06 1.4042e-05 2.6231e-08 2.4502e-05 4.9389e-05 0:00:02 1812

189 3.2474e-05 6.6035e-06 6.7754e-06 1.4249e-05 2.6402e-08 2.5242e-05 5.0730e-05 0:00:02 1811

190 3.3603e-05 6.7856e-06 6.9715e-06 1.4467e-05 2.7112e-08 2.5837e-05 5.1807e-05 0:00:01 1810

191 3.4815e-05 6.9939e-06 7.1982e-06 1.4710e-05 2.7577e-08 2.6292e-05 5.2566e-05 0:06:03 1809

192 3.6159e-05 7.2268e-06 7.4551e-06 1.4977e-05 2.7220e-08 2.6618e-05 5.3084e-05 0:04:50 1808

193 3.7654e-05 7.4859e-06 7.7372e-06 1.5275e-05 2.7910e-08 2.6853e-05 5.3429e-05 0:03:52 1807

194 3.9314e-05 7.7793e-06 8.0475e-06 1.5614e-05 2.9242e-08 2.7053e-05 5.3713e-05 0:03:05 1806

195 4.1179e-05 8.1132e-06 8.3951e-06 1.6002e-05 3.0264e-08 2.7248e-05 5.4026e-05 0:02:28 1805

196 4.3296e-05 8.4972e-06 8.7897e-06 1.6453e-05 3.2182e-08 2.7473e-05 5.4409e-05 0:01:59 1804

197 4.5715e-05 8.9360e-06 9.2421e-06 1.6987e-05 3.2338e-08 2.7772e-05 5.4949e-05 0:01:35 1803

198 4.8498e-05 9.4424e-06 9.7609e-06 1.7620e-05 3.4578e-08 2.8169e-05 5.5678e-05 0:01:16 1802

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

199 5.1727e-05 1.0029e-05 1.0360e-05 1.8372e-05 3.6693e-08 2.8718e-05 5.6744e-05 0:01:01 1801

200 5.5489e-05 1.0732e-05 1.1059e-05 1.9273e-05 4.0108e-08 2.9472e-05 5.8261e-05 0:00:48 1800

201 5.9710e-05 1.1570e-05 1.1884e-05 2.0366e-05 4.4384e-08 3.0396e-05 6.0182e-05 0:00:39 1799

202 6.0568e-05 1.2508e-05 1.2795e-05 2.1551e-05 3.8861e-08 3.0377e-05 6.2054e-05 0:00:31 1798

203 5.7838e-05 1.2327e-05 1.2535e-05 2.0718e-05 3.5754e-08 3.0480e-05 6.3862e-05 0:00:25 1797

204 5.2288e-05 1.1809e-05 1.1526e-05 1.9995e-05 3.3308e-08 2.9860e-05 6.2965e-05 0:00:20 1796

205 4.6420e-05 1.0959e-05 1.0188e-05 1.8863e-05 3.1475e-08 2.9121e-05 6.1504e-05 0:00:16 1795

206 4.1439e-05 9.9719e-06 9.0389e-06 1.7902e-05 3.0928e-08 2.8551e-05 6.1005e-05 0:00:13 1794

207 3.7008e-05 8.8999e-06 8.1345e-06 1.7076e-05 3.1041e-08 2.8586e-05 6.2500e-05 0:00:10 1793

208 3.3303e-05 8.0044e-06 7.3771e-06 1.6327e-05 3.0839e-08 2.8906e-05 6.4975e-05 0:00:08 1792

209 3.0066e-05 7.1815e-06 6.7184e-06 1.5633e-05 3.1504e-08 2.9172e-05 6.6895e-05 0:00:06 1791

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

210 2.7186e-05 6.4341e-06 6.1324e-06 1.5024e-05 3.3071e-08 2.9468e-05 6.8003e-05 0:00:05 1790

211 2.4786e-05 5.8135e-06 5.6851e-06 1.4535e-05 3.2867e-08 2.9759e-05 6.8490e-05 0:00:04 1789

212 2.2846e-05 5.3014e-06 5.3430e-06 1.4163e-05 3.4680e-08 2.9929e-05 6.8412e-05 0:00:03 1788

213 2.1290e-05 4.8633e-06 5.0192e-06 1.3910e-05 3.5093e-08 2.9897e-05 6.7594e-05 0:00:03 1787

214 1.9941e-05 4.5169e-06 4.7186e-06 1.3693e-05 3.5047e-08 2.9703e-05 6.6009e-05 0:00:02 1786

215 1.8797e-05 4.2199e-06 4.4733e-06 1.3490e-05 3.4861e-08 2.9402e-05 6.3970e-05 0:00:02 1785

216 1.7840e-05 3.9447e-06 4.3076e-06 1.3358e-05 3.4305e-08 2.9109e-05 6.2077e-05 0:05:58 1784

217 1.7123e-05 3.6976e-06 4.2144e-06 1.3272e-05 3.3477e-08 2.8910e-05 6.1020e-05 0:04:46 1783

218 1.6535e-05 3.4803e-06 4.1452e-06 1.3149e-05 3.2319e-08 2.8602e-05 5.9943e-05 0:03:49 1782

219 1.6046e-05 3.2972e-06 4.0799e-06 1.2933e-05 3.1106e-08 2.8245e-05 5.8625e-05 0:03:03 1781

220 1.5492e-05 3.1328e-06 3.9974e-06 1.2706e-05 2.7538e-08 2.7664e-05 5.6977e-05 0:02:26 1780

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

221 1.4964e-05 3.0155e-06 3.8874e-06 1.2427e-05 2.5817e-08 2.6807e-05 5.4686e-05 0:01:57 1779

222 1.4381e-05 2.9220e-06 3.7560e-06 1.2082e-05 2.4135e-08 2.5753e-05 5.1948e-05 0:01:34 1778

223 1.3728e-05 2.8371e-06 3.6038e-06 1.1716e-05 2.0937e-08 2.4544e-05 4.8644e-05 0:01:15 1777

224 1.3012e-05 2.7666e-06 3.4351e-06 1.1328e-05 1.9387e-08 2.3286e-05 4.5129e-05 0:01:00 1776

225 1.2249e-05 2.7005e-06 3.2641e-06 1.0908e-05 1.7251e-08 2.2399e-05 4.2401e-05 0:00:48 1775

226 1.1420e-05 2.6270e-06 3.1050e-06 1.0443e-05 1.5404e-08 2.2477e-05 4.1299e-05 0:00:38 1774

227 1.0564e-05 2.5646e-06 2.9540e-06 9.9588e-06 1.4567e-08 2.3919e-05 4.3901e-05 0:00:31 1773

228 9.8584e-06 2.4953e-06 2.8193e-06 9.4941e-06 1.5850e-08 2.5915e-05 4.8733e-05 0:00:24 1772

229 9.3394e-06 2.4363e-06 2.7167e-06 9.0338e-06 1.7532e-08 2.7716e-05 5.2778e-05 0:00:20 1771

230 9.0867e-06 2.3863e-06 2.6268e-06 8.5978e-06 1.7962e-08 2.9093e-05 5.5619e-05 0:00:16 1770

231 8.9589e-06 2.3363e-06 2.5489e-06 8.1712e-06 1.8725e-08 2.9890e-05 5.6967e-05 0:00:12 1769

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

232 8.8797e-06 2.2761e-06 2.4797e-06 7.7693e-06 1.9077e-08 3.0034e-05 5.6868e-05 0:00:10 1768

233 8.7835e-06 2.2053e-06 2.4102e-06 7.3773e-06 1.9111e-08 2.9564e-05 5.5440e-05 0:00:08 1767

234 8.6188e-06 2.1227e-06 2.3376e-06 7.0009e-06 1.8772e-08 2.8480e-05 5.2882e-05 0:00:06 1766

235 8.4259e-06 2.0418e-06 2.2581e-06 6.6278e-06 1.8129e-08 2.6825e-05 4.9226e-05 0:00:05 1765

236 8.1875e-06 1.9663e-06 2.1707e-06 6.2520e-06 1.8268e-08 2.4715e-05 4.4715e-05 0:00:04 1764

237 7.9137e-06 1.8879e-06 2.0763e-06 5.8813e-06 1.6812e-08 2.2335e-05 3.9776e-05 0:00:03 1763

238 7.6437e-06 1.8140e-06 1.9688e-06 5.5155e-06 1.5333e-08 1.9814e-05 3.4699e-05 0:00:03 1762

239 7.3698e-06 1.7294e-06 1.8560e-06 5.1639e-06 1.3875e-08 1.7332e-05 3.0006e-05 0:05:54 1761

240 7.0568e-06 1.6387e-06 1.7359e-06 4.8230e-06 1.2463e-08 1.4935e-05 2.5656e-05 0:04:43 1760

241 6.7017e-06 1.5394e-06 1.6005e-06 4.4918e-06 1.1101e-08 1.2669e-05 2.1612e-05 0:03:46 1759

242 6.2866e-06 1.4304e-06 1.4619e-06 4.1716e-06 9.7661e-09 1.0639e-05 1.8018e-05 0:03:01 1758

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

243 5.8155e-06 1.3165e-06 1.3240e-06 3.8619e-06 8.4922e-09 8.9517e-06 1.5165e-05 0:02:25 1757

244 5.3191e-06 1.2008e-06 1.1840e-06 3.5581e-06 7.2994e-09 7.4832e-06 1.2800e-05 0:01:56 1756

245 4.8007e-06 1.0844e-06 1.0454e-06 3.2513e-06 6.1633e-09 6.3634e-06 1.0891e-05 0:01:33 1755

246 4.2799e-06 9.6743e-07 9.1908e-07 2.9595e-06 5.0844e-09 5.6211e-06 9.9572e-06 0:01:14 1754

247 3.7605e-06 8.5350e-07 8.0504e-07 2.6932e-06 4.1060e-09 5.2425e-06 9.8568e-06 0:00:59 1753

248 3.2482e-06 7.4331e-07 7.0003e-07 2.4477e-06 3.3502e-09 5.2924e-06 1.0151e-05 0:00:47 1752

249 2.8018e-06 6.4095e-07 6.1536e-07 2.2307e-06 2.7128e-09 5.4641e-06 1.0791e-05 0:00:38 1751

250 2.4572e-06 5.6970e-07 5.5182e-07 2.0482e-06 2.2757e-09 5.7174e-06 1.1364e-05 0:00:30 1750

251 2.1739e-06 5.2375e-07 5.0375e-07 1.8860e-06 2.1585e-09 5.9423e-06 1.1687e-05 0:00:24 1749

252 1.9647e-06 4.8968e-07 4.7085e-07 1.7452e-06 2.1921e-09 6.0484e-06 1.1767e-05 0:00:19 1748

253 1.8724e-06 4.6909e-07 4.4635e-07 1.6176e-06 2.2120e-09 6.0277e-06 1.1556e-05 0:00:15 1747

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

254 1.8055e-06 4.5402e-07 4.2906e-07 1.4960e-06 2.0817e-09 5.8657e-06 1.1101e-05 0:00:12 1746

255 1.7328e-06 4.3966e-07 4.1412e-07 1.3850e-06 2.0376e-09 5.5851e-06 1.0441e-05 0:00:10 1745

256 1.6599e-06 4.2493e-07 4.0162e-07 1.2771e-06 1.9594e-09 5.2114e-06 9.6260e-06 0:00:08 1744

257 1.5844e-06 4.0901e-07 3.8759e-07 1.1740e-06 1.8620e-09 4.7711e-06 8.6907e-06 0:00:06 1743

258 1.5125e-06 3.9342e-07 3.7156e-07 1.0734e-06 1.7624e-09 4.2921e-06 7.7101e-06 0:00:05 1742

259 1.4367e-06 3.7597e-07 3.5422e-07 9.7578e-07 1.6745e-09 3.8003e-06 6.7131e-06 0:00:04 1741

260 1.3650e-06 3.5701e-07 3.3711e-07 8.8412e-07 1.4411e-09 3.3156e-06 5.7541e-06 0:00:03 1740

261 1.2864e-06 3.3697e-07 3.1811e-07 7.9729e-07 1.3211e-09 2.8537e-06 4.8718e-06 0:00:03 1739

262 1.2040e-06 3.1648e-07 2.9774e-07 7.1566e-07 1.2082e-09 2.4274e-06 4.0857e-06 0:00:02 1738

263 1.1171e-06 2.9542e-07 2.7715e-07 6.3943e-07 1.1042e-09 2.0460e-06 3.3936e-06 0:00:02 1737

264 1.0332e-06 2.7337e-07 2.5505e-07 5.6804e-07 1.0174e-09 1.7082e-06 2.8059e-06 0:00:01 1736

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

265 9.4782e-07 2.5104e-07 2.3215e-07 5.0128e-07 8.1743e-10 1.4150e-06 2.3154e-06 0:00:01 1735

266 8.6076e-07 2.2804e-07 2.0913e-07 4.3958e-07 6.9834e-10 1.1658e-06 1.9105e-06 0:00:01 1734

267 7.7311e-07 2.0504e-07 1.8638e-07 3.8387e-07 6.5605e-10 9.5846e-07 1.5809e-06 0:05:47 1733

268 6.8902e-07 1.8273e-07 1.6454e-07 3.3492e-07 5.5308e-10 7.9157e-07 1.3373e-06 0:04:38 1732

269 6.1121e-07 1.6153e-07 1.4423e-07 2.9148e-07 5.1033e-10 6.6459e-07 1.1470e-06 0:03:42 1731

270 5.3742e-07 1.4148e-07 1.2545e-07 2.5374e-07 4.8555e-10 5.6441e-07 9.9509e-07 0:02:57 1730

271 4.6824e-07 1.2252e-07 1.0871e-07 2.2036e-07 4.0378e-10 4.8719e-07 8.7430e-07 0:02:22 1729

272 4.0406e-07 1.0468e-07 9.3459e-08 1.9116e-07 3.6279e-10 4.3084e-07 7.7705e-07 0:01:53 1728

273 3.4509e-07 8.8357e-08 7.9543e-08 1.6576e-07 3.3979e-10 3.9591e-07 7.0881e-07 0:01:31 1727

274 2.9256e-07 7.3941e-08 6.7127e-08 1.4361e-07 2.8199e-10 3.7600e-07 6.8372e-07 0:01:13 1726

275 2.4794e-07 6.1225e-08 5.6559e-08 1.2500e-07 2.5935e-10 3.6522e-07 6.8559e-07 0:00:58 1725

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

276 2.0847e-07 5.0297e-08 4.7310e-08 1.0950e-07 2.1656e-10 3.5539e-07 6.8301e-07 0:00:46 1724

277 1.7451e-07 4.1575e-08 3.9747e-08 9.6232e-08 2.0396e-10 3.4592e-07 6.7374e-07 0:00:37 1723

278 1.4818e-07 3.4418e-08 3.3588e-08 8.5523e-08 1.8987e-10 3.3588e-07 6.5284e-07 0:00:30 1722

279 1.2830e-07 2.9369e-08 2.8542e-08 7.6191e-08 1.6612e-10 3.2300e-07 6.2348e-07 0:00:24 1721

280 1.1176e-07 2.6128e-08 2.5127e-08 6.8269e-08 1.5595e-10 3.0639e-07 5.8522e-07 0:00:19 1720

281 9.8359e-08 2.4014e-08 2.2585e-08 6.1705e-08 1.3320e-10 2.8588e-07 5.4008e-07 0:00:15 1719

282 8.9708e-08 2.2324e-08 2.0772e-08 5.5997e-08 1.2198e-10 2.6220e-07 4.8987e-07 0:00:12 1718

283 8.1926e-08 2.0608e-08 1.9430e-08 5.0590e-08 1.0870e-10 2.3629e-07 4.3638e-07 0:00:10 1717

284 7.5285e-08 1.9226e-08 1.8255e-08 4.5670e-08 9.0079e-11 2.0986e-07 3.8165e-07 0:00:08 1716

285 6.9393e-08 1.7891e-08 1.7183e-08 4.1384e-08 7.9909e-11 1.8329e-07 3.2795e-07 0:00:06 1715

286 6.3595e-08 1.6702e-08 1.6001e-08 3.7321e-08 7.0464e-11 1.5764e-07 2.7583e-07 0:00:05 1714

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

287 5.8047e-08 1.5500e-08 1.4732e-08 3.3432e-08 6.2749e-11 1.3380e-07 2.2879e-07 0:00:04 1713

288 5.2669e-08 1.4304e-08 1.3419e-08 2.9863e-08 5.7817e-11 1.1194e-07 1.8722e-07 0:00:03 1712

289 4.7540e-08 1.3049e-08 1.2141e-08 2.6523e-08 5.0760e-11 9.2384e-08 1.5247e-07 0:00:03 1711

290 4.2993e-08 1.1802e-08 1.0965e-08 2.3402e-08 4.7632e-11 7.5818e-08 1.2357e-07 0:00:02 1710

291 3.9107e-08 1.0577e-08 9.8026e-09 2.0547e-08 4.5222e-11 6.1825e-08 1.0026e-07 0:05:43 1709

! 292 solution is converged

292 3.5261e-08 9.3839e-09 8.6695e-09 1.8033e-08 3.9348e-11 5.0570e-08 8.2754e-08 0:04:35 1708

Writing data to D:\2. UM - 2nd Sem\KQE 7001 - Research Project\. ANSYS Case\Case 2 - Test\Case 2 - Test_files\dp0\FLU\Fluent\SYS.ip ...

x-coord

y-coord

z-coord

pressure

x-velocity

y-velocity

z-velocity

temperature

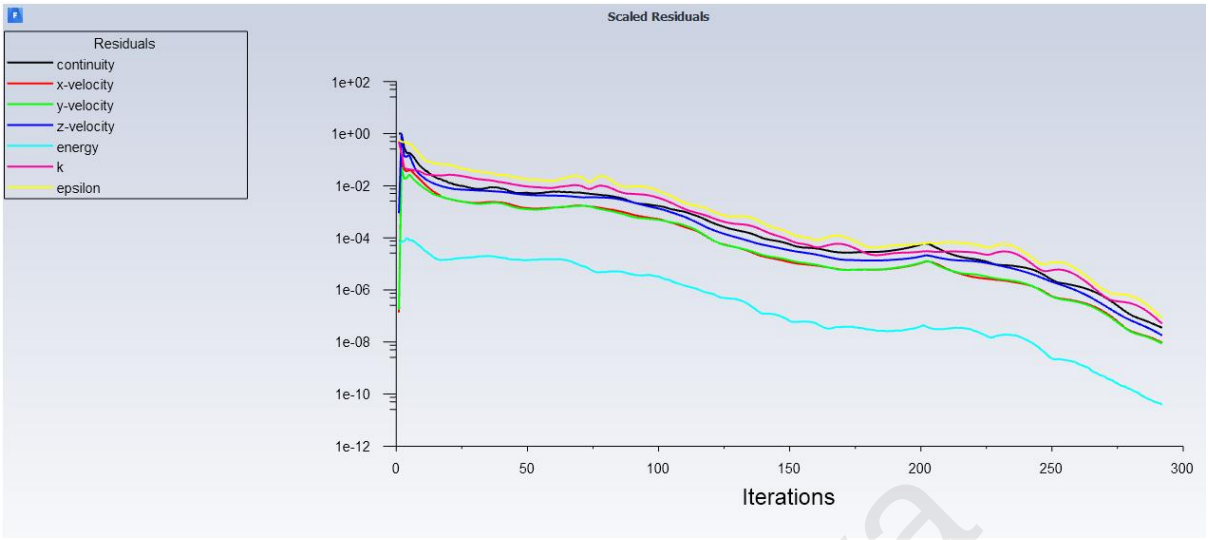
k

epsilon

Done.

Calculation complete.

ANSYS Residuals – Water (Case 2)



APPENDIX D – CASE 2 ANSYS SETUP, ITERATION, AND RESIDUALS FOR OIL

ANSYS Setup – Oil (Case 2)

3570 hexahedral cells, zone 4, binary.
3570 cell partition ids, zone 4, 7 partitions, binary.
8950 quadrilateral interior faces, zone 1, binary.
2312 quadrilateral wall faces, zone 5, binary.
9 quadrilateral velocity-inlet faces, zone 6, binary.
9 quadrilateral pressure-outlet faces, zone 7, binary.
1190 quadrilateral wall faces, zone 8, binary.
5524 nodes, binary.
5524 node flags, binary.

Building...
mesh
distributing mesh
parts.....,
faces.....,
nodes.....,
cells.....,
bandwidth reduction using Reverse Cuthill-McKee: 243/34 = 7.14706
materials,
interface,
domains,
mixture
zones,
heat
outlet
inlet
wall-fluid
interior-fluid
fluidSetting fluid (mixture) ... Done.
Setting zone id of fluid to 4.
Setting zone id of interior-fluid to 1.
Setting zone id of wall-fluid to 5.
Setting zone id of inlet to 6.
Setting zone id of outlet to 7.
Setting zone id of heat to 8.
Done.
Setting fluid (mixture) ... Done.
Setting inlet (mixture) (zone type changed to mass-flow-inlet) ... Done.
Setting interior-fluid (mixture) ... Done.
Setting wall-fluid (mixture) ... Done.
Setting outlet (mixture) ... Done.
Setting heat (mixture) ... Done.

parallel,
Done.

Preparing mesh for display...
Done.

Setting Post Processing and Surfaces information ... Done.
Information: Converting parameter Pd to report definition.
Information: Converting parameter Vout to report definition.
Information: Converting parameter Tout to report definition.
Information: Converting parameter Tf to report definition.

ANSYS Iteration – Oil (Case 2)

writing rp variables ... Done.

writing domain variables ... Done.

writing fluid (type fluid) (mixture) ... Done.

writing inlet (type mass-flow-inlet) (mixture) ... Done.

writing interior-fluid (type interior) (mixture) ... Done.

writing wall-fluid (type wall) (mixture) ... Done.

writing outlet (type pressure-outlet) (mixture) ... Done.

writing heat (type wall) (mixture) ... Done.

writing zones map name-id ... Done.

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

1 1.0000e+00 4.9752e-07 6.1180e-07 1.0158e-03 1.6622e-05 2.7692e-01 4.2744e-01 0:00:00 1999

2 1.0000e+00 1.1999e-01 5.1556e-02 1.0157e+00 2.0499e-05 1.0272e-01 3.5134e-01 0:33:18 1998

3 2.9709e-01 4.1683e-02 1.8611e-02 1.2709e-01 2.2721e-05 5.3044e-02 4.4543e-01 0:26:38 1997

4 1.9600e-01 4.7751e-02 2.6751e-02 1.8271e-01 2.7880e-05 5.2366e-02 3.5928e-01 0:21:17 1996

5 1.9525e-01 4.7298e-02 2.9370e-02 1.4914e-01 3.2832e-05 4.7310e-02 3.3657e-01 0:17:01 1995

6 1.4526e-01 3.3943e-02 1.8450e-02 7.8519e-02 2.5933e-05 4.1600e-02 2.6936e-01 0:13:37 1994

Reversed flow on 1 face (11.1% area) of pressure-outlet 7.

7 1.0729e-01 2.8205e-02 1.6107e-02 4.8546e-02 1.9035e-05 3.8909e-02 2.2459e-01 0:10:53 1993

8 7.5130e-02 2.2829e-02 1.2917e-02 3.6083e-02 1.5068e-05 3.6356e-02 1.7528e-01 0:08:42 1992

9 5.8647e-02 1.8215e-02 1.0554e-02 2.7766e-02 1.2977e-05 3.1386e-02 1.2772e-01 0:06:58 1991

10 4.7128e-02 1.4109e-02 8.6751e-03 2.2787e-02 1.0108e-05 2.7339e-02 9.5556e-02 0:05:34 1990

11 3.9303e-02 1.1458e-02 7.4940e-03 1.8111e-02 8.6010e-06 2.5480e-02 9.0617e-02 0:04:27 1989

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

12 3.3247e-02 9.1430e-03 6.3164e-03 1.5591e-02 7.0847e-06 2.5296e-02 9.0285e-02 0:03:33 1988

13 2.7650e-02 7.2237e-03 5.3353e-03 1.3505e-02 5.8760e-06 2.5327e-02 8.6798e-02 0:02:51 1987

14 2.3610e-02 5.9729e-03 4.5801e-03 1.2020e-02 4.9918e-06 2.4591e-02 7.7447e-02 0:02:16 1986

15 1.9426e-02 5.1223e-03 4.0361e-03 1.0857e-02 4.4152e-06 2.4044e-02 7.0570e-02 0:01:49 1985

16 1.8103e-02 4.3357e-03 3.7138e-03 9.9547e-03 4.0139e-06 2.3082e-02 6.2368e-02 0:01:27 1984

17 1.6505e-02 3.7544e-03 3.4390e-03 9.0646e-03 3.9581e-06 2.2166e-02 5.5899e-02 0:01:10 1983

18 1.4543e-02 3.4297e-03 3.1786e-03 8.4293e-03 3.8742e-06 2.1254e-02 5.0617e-02 0:07:32 1982

19 1.3963e-02 3.1598e-03 2.9058e-03 8.0733e-03 3.7318e-06 2.0223e-02 4.6299e-02 0:06:02 1981

20 1.2583e-02 2.8547e-03 2.6817e-03 7.6283e-03 3.6519e-06 1.9370e-02 4.2848e-02 0:04:49 1980

21 1.1237e-02 2.6346e-03 2.4984e-03 7.2689e-03 3.7467e-06 1.8563e-02 3.9619e-02 0:03:51 1979

22 1.0198e-02 2.4734e-03 2.3731e-03 6.8695e-03 3.7988e-06 1.7747e-02 3.6697e-02 0:03:05 1978

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

23 9.5764e-03 2.3143e-03 2.2569e-03 6.6238e-03 3.8686e-06 1.6938e-02 3.4121e-02 0:02:28 1977

24 8.6857e-03 2.1866e-03 2.1593e-03 6.4294e-03 4.0027e-06 1.6625e-02 3.3481e-02 0:01:58 1976

25 8.1536e-03 2.0824e-03 2.0640e-03 6.2266e-03 3.9809e-06 1.6230e-02 3.3163e-02 0:01:34 1975

26 7.5370e-03 1.9880e-03 1.9653e-03 6.0642e-03 3.8653e-06 1.6078e-02 3.3212e-02 0:01:16 1974

27 6.9311e-03 1.8910e-03 1.8765e-03 5.9168e-03 3.7048e-06 1.5933e-02 3.3250e-02 0:01:00 1973

28 6.4821e-03 1.8111e-03 1.7995e-03 5.7788e-03 3.6315e-06 1.5764e-02 3.2758e-02 0:00:48 1972

29 6.1780e-03 1.7430e-03 1.7266e-03 5.6365e-03 3.5474e-06 1.5426e-02 3.1795e-02 0:00:39 1971

30 5.9712e-03 1.6820e-03 1.6679e-03 5.5084e-03 3.5266e-06 1.5089e-02 3.0828e-02 0:00:31 1970

31 5.7970e-03 1.6247e-03 1.6088e-03 5.3873e-03 3.5584e-06 1.4665e-02 2.9673e-02 0:00:25 1969

32 5.6947e-03 1.5865e-03 1.5531e-03 5.2629e-03 3.5903e-06 1.4206e-02 2.8586e-02 0:00:20 1968

33 5.5879e-03 1.5648e-03 1.4975e-03 5.1702e-03 3.6970e-06 1.3725e-02 2.7501e-02 0:00:16 1967

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

34 5.5844e-03 1.5449e-03 1.4315e-03 5.1046e-03 3.7641e-06 1.3206e-02 2.6297e-02 0:00:13 1966

35 5.5980e-03 1.5642e-03 1.3896e-03 5.0485e-03 3.8012e-06 1.2766e-02 2.5127e-02 0:00:10 1965

36 5.6089e-03 1.5955e-03 1.3759e-03 4.9675e-03 3.8715e-06 1.2379e-02 2.4146e-02 0:00:08 1964

37 5.6430e-03 1.6313e-03 1.3937e-03 4.8737e-03 3.9123e-06 1.2067e-02 2.3362e-02 0:06:39 1963

38 5.9957e-03 1.6532e-03 1.4174e-03 4.7712e-03 3.8995e-06 1.1741e-02 2.2403e-02 0:05:19 1962

39 5.8476e-03 1.7042e-03 1.4813e-03 4.6587e-03 3.9917e-06 1.1471e-02 2.1559e-02 0:04:15 1961

40 6.2859e-03 1.7620e-03 1.5451e-03 4.5569e-03 3.9316e-06 1.1109e-02 2.0757e-02 0:03:24 1960

41 6.0904e-03 1.7853e-03 1.6125e-03 4.4516e-03 3.9313e-06 1.0829e-02 1.9987e-02 0:02:43 1959

42 6.3484e-03 1.8059e-03 1.6625e-03 4.3551e-03 3.8193e-06 1.0382e-02 1.8893e-02 0:02:10 1958

43 6.1012e-03 1.7987e-03 1.6786e-03 4.2732e-03 3.6971e-06 9.8911e-03 1.7639e-02 0:01:44 1957

44 6.0920e-03 1.8058e-03 1.6723e-03 4.1654e-03 3.5463e-06 9.3819e-03 1.6733e-02 0:01:23 1956

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

45 5.5698e-03 1.7816e-03 1.6117e-03 4.0809e-03 3.5780e-06 9.1483e-03 1.6766e-02 0:01:07 1955

46 5.5228e-03 1.7384e-03 1.5237e-03 3.9825e-03 3.7450e-06 8.9890e-03 1.7157e-02 0:00:53 1954

47 4.8330e-03 1.6542e-03 1.4083e-03 3.9041e-03 3.5957e-06 8.8823e-03 1.7327e-02 0:00:43 1953

48 4.7310e-03 1.5485e-03 1.2956e-03 3.8537e-03 3.4774e-06 8.6432e-03 1.7122e-02 0:00:34 1952

49 4.3688e-03 1.4452e-03 1.1912e-03 3.8032e-03 3.6153e-06 8.4270e-03 1.6545e-02 0:00:27 1951

50 4.6071e-03 1.3814e-03 1.1014e-03 3.7605e-03 3.8500e-06 8.2051e-03 1.5957e-02 0:00:22 1950

51 4.4834e-03 1.3461e-03 1.0678e-03 3.7146e-03 3.9143e-06 8.0145e-03 1.5405e-02 0:00:17 1949

52 4.4742e-03 1.3238e-03 1.0472e-03 3.6996e-03 3.8718e-06 7.7187e-03 1.4674e-02 0:00:14 1948

53 4.4057e-03 1.2955e-03 1.0290e-03 3.6863e-03 3.9219e-06 7.3603e-03 1.3896e-02 0:00:11 1947

54 4.3747e-03 1.2791e-03 1.0291e-03 3.6883e-03 3.9765e-06 6.9443e-03 1.3304e-02 0:06:38 1946

55 4.3729e-03 1.2658e-03 1.0487e-03 3.7059e-03 3.9723e-06 6.6381e-03 1.2898e-02 0:05:18 1945

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

56 4.4751e-03 1.2837e-03 1.0750e-03 3.7323e-03 3.9595e-06 6.4358e-03 1.2570e-02 0:04:15 1944

57 4.7724e-03 1.2985e-03 1.1078e-03 3.7787e-03 3.9998e-06 6.4328e-03 1.2504e-02 0:03:24 1943

58 4.9875e-03 1.3092e-03 1.1346e-03 3.8274e-03 4.0703e-06 6.3053e-03 1.2122e-02 0:02:43 1942

59 5.2351e-03 1.3260e-03 1.1748e-03 3.8707e-03 4.1472e-06 6.2870e-03 1.2176e-02 0:02:10 1941

60 5.2887e-03 1.3581e-03 1.2320e-03 3.8978e-03 4.1902e-06 6.5812e-03 1.2958e-02 0:01:44 1940

61 5.1735e-03 1.3717e-03 1.3046e-03 3.9220e-03 4.2757e-06 6.8757e-03 1.3680e-02 0:01:23 1939

62 5.3031e-03 1.3789e-03 1.3475e-03 3.9311e-03 4.2520e-06 7.4452e-03 1.5358e-02 0:01:07 1938

63 4.9953e-03 1.3997e-03 1.4046e-03 3.9627e-03 4.2067e-06 7.8585e-03 1.6682e-02 0:00:53 1937

64 5.2254e-03 1.4463e-03 1.4335e-03 3.9710e-03 4.2396e-06 8.2139e-03 1.7890e-02 0:00:43 1936

65 5.3302e-03 1.5257e-03 1.4675e-03 3.9595e-03 4.1502e-06 8.7187e-03 1.9835e-02 0:00:34 1935

66 5.2629e-03 1.5843e-03 1.4974e-03 3.9335e-03 4.0691e-06 9.0264e-03 2.0856e-02 0:00:27 1934

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

67 5.4011e-03 1.6386e-03 1.5680e-03 3.8498e-03 3.8099e-06 9.3212e-03 2.2182e-02 0:00:22 1933

68 5.3906e-03 1.6809e-03 1.6158e-03 3.7982e-03 3.5607e-06 9.1233e-03 2.1461e-02 0:00:17 1932

69 5.3885e-03 1.7405e-03 1.6749e-03 3.6983e-03 3.1885e-06 9.1082e-03 2.1401e-02 0:00:14 1931

70 5.0221e-03 1.7740e-03 1.6788e-03 3.6535e-03 2.8091e-06 8.5621e-03 1.8903e-02 0:00:11 1930

71 5.0414e-03 1.7588e-03 1.6816e-03 3.5932e-03 2.4749e-06 7.9388e-03 1.6660e-02 0:00:09 1929

72 4.8507e-03 1.7035e-03 1.6732e-03 3.5892e-03 2.2838e-06 7.1379e-03 1.3906e-02 0:00:07 1928

73 4.8617e-03 1.6450e-03 1.6569e-03 3.6265e-03 2.0383e-06 6.7358e-03 1.2601e-02 0:00:06 1927

74 4.8132e-03 1.6037e-03 1.6127e-03 3.7045e-03 1.7583e-06 7.0206e-03 1.3260e-02 0:00:05 1926

75 4.7768e-03 1.5649e-03 1.5487e-03 3.7241e-03 1.5853e-06 7.7550e-03 1.5701e-02 0:00:04 1925

76 4.7069e-03 1.5415e-03 1.4675e-03 3.7171e-03 1.4905e-06 8.5101e-03 1.8645e-02 0:00:03 1924

77 4.5833e-03 1.5136e-03 1.3841e-03 3.6839e-03 1.4596e-06 8.9783e-03 2.0742e-02 0:00:02 1923

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

78 4.5357e-03 1.4754e-03 1.3161e-03 3.6636e-03 1.4526e-06 9.1565e-03 2.1780e-02 0:00:02 1922

79 4.4428e-03 1.4270e-03 1.2598e-03 3.6115e-03 1.4697e-06 9.0232e-03 2.1460e-02 0:00:01 1921

80 4.4042e-03 1.3676e-03 1.2195e-03 3.5480e-03 1.5304e-06 8.6235e-03 1.9943e-02 0:00:01 1920

81 4.2710e-03 1.3067e-03 1.1613e-03 3.4670e-03 1.5538e-06 8.0950e-03 1.7884e-02 0:06:25 1919

82 4.1545e-03 1.2497e-03 1.1082e-03 3.3842e-03 1.5241e-06 7.3885e-03 1.5452e-02 0:05:08 1918

83 4.0249e-03 1.1903e-03 1.0543e-03 3.2767e-03 1.5787e-06 6.6712e-03 1.3038e-02 0:04:06 1917

84 3.8056e-03 1.1335e-03 9.9506e-04 3.1695e-03 1.5341e-06 6.0207e-03 1.1042e-02 0:03:17 1916

85 3.6639e-03 1.0829e-03 9.3599e-04 3.0400e-03 1.4783e-06 5.4810e-03 9.6361e-03 0:02:37 1915

86 3.4721e-03 1.0297e-03 8.7597e-04 2.9012e-03 1.4126e-06 5.0540e-03 8.7602e-03 0:02:06 1914

87 3.2169e-03 9.7240e-04 8.1736e-04 2.7526e-03 1.3450e-06 4.7332e-03 8.3127e-03 0:01:41 1913

88 2.9505e-03 9.2085e-04 7.6251e-04 2.6027e-03 1.2862e-06 4.5297e-03 8.2423e-03 0:01:20 1912

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

89 2.6918e-03 8.6852e-04 7.0845e-04 2.4479e-03 1.2205e-06 4.4180e-03 8.3533e-03 0:01:04 1911

90 2.4364e-03 8.1089e-04 6.5537e-04 2.2942e-03 1.1719e-06 4.3455e-03 8.5252e-03 0:00:51 1910

91 2.2404e-03 7.5825e-04 6.1926e-04 2.1474e-03 1.1140e-06 4.2876e-03 8.6934e-03 0:00:41 1909

92 2.0908e-03 7.1215e-04 5.8891e-04 2.0089e-03 1.0786e-06 4.2089e-03 8.7120e-03 0:00:33 1908

93 1.9789e-03 6.6683e-04 5.5956e-04 1.8804e-03 1.0656e-06 4.1090e-03 8.5971e-03 0:00:26 1907

94 1.8989e-03 6.3434e-04 5.4018e-04 1.7626e-03 1.1012e-06 3.9994e-03 8.3383e-03 0:00:21 1906

95 1.8354e-03 6.0679e-04 5.2377e-04 1.6623e-03 1.0892e-06 3.8636e-03 7.9490e-03 0:00:17 1905

96 1.7800e-03 5.8160e-04 5.1000e-04 1.5646e-03 1.0770e-06 3.7420e-03 7.6246e-03 0:06:34 1904

97 1.6983e-03 5.5452e-04 4.9433e-04 1.4798e-03 1.0319e-06 3.6015e-03 7.2254e-03 0:05:15 1903

98 1.6398e-03 5.2997e-04 4.7830e-04 1.4039e-03 1.0049e-06 3.4189e-03 6.6972e-03 0:04:12 1902

99 1.5687e-03 5.1104e-04 4.6843e-04 1.3310e-03 9.7927e-07 3.2140e-03 6.1076e-03 0:03:22 1901

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

100 1.5299e-03 4.9731e-04 4.5709e-04 1.2627e-03 8.7868e-07 3.0107e-03 5.5920e-03 0:02:41 1900

101 1.4807e-03 4.7874e-04 4.4136e-04 1.1968e-03 7.9527e-07 2.8222e-03 5.1746e-03 0:02:09 1899

102 1.4335e-03 4.4132e-04 4.2336e-04 1.1297e-03 7.7269e-07 2.6093e-03 4.7769e-03 0:01:43 1898

103 1.3430e-03 4.1297e-04 4.0169e-04 1.0547e-03 7.0134e-07 2.3956e-03 4.3965e-03 0:01:22 1897

104 1.2538e-03 3.8557e-04 3.8735e-04 9.8385e-04 6.1949e-07 2.1754e-03 3.9902e-03 0:01:06 1896

105 1.1765e-03 3.6308e-04 3.6683e-04 9.0424e-04 5.5705e-07 1.9805e-03 3.6181e-03 0:00:53 1895

106 1.1337e-03 3.4002e-04 3.5098e-04 8.3765e-04 5.2878e-07 1.7927e-03 3.2762e-03 0:00:42 1894

107 1.1110e-03 3.1630e-04 3.3726e-04 7.7648e-04 4.9759e-07 1.6305e-03 2.9788e-03 0:00:34 1893

108 1.0184e-03 2.9210e-04 3.2627e-04 7.1599e-04 4.6030e-07 1.4981e-03 2.7654e-03 0:00:27 1892

109 9.7944e-04 2.6969e-04 3.0944e-04 6.6305e-04 4.2813e-07 1.3798e-03 2.6041e-03 0:00:22 1891

110 9.4607e-04 2.4832e-04 2.8278e-04 6.1417e-04 4.0938e-07 1.2855e-03 2.4936e-03 0:00:17 1890

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

111 8.8540e-04 2.3192e-04 2.5968e-04 5.5963e-04 3.9280e-07 1.2125e-03 2.3994e-03 0:00:14 1889

112 8.2895e-04 2.1640e-04 2.4009e-04 5.0372e-04 3.7286e-07 1.1511e-03 2.3104e-03 0:00:11 1888

113 7.7066e-04 2.0095e-04 2.1963e-04 4.5214e-04 3.4730e-07 1.0968e-03 2.2147e-03 0:00:09 1887

114 7.1124e-04 1.8664e-04 1.9739e-04 4.0699e-04 3.3047e-07 1.0334e-03 2.0891e-03 0:00:07 1886

115 6.6460e-04 1.7166e-04 1.7589e-04 3.6381e-04 3.0702e-07 9.6642e-04 1.9454e-03 0:00:06 1885

116 6.1319e-04 1.5410e-04 1.5701e-04 3.2335e-04 2.8606e-07 8.9449e-04 1.7875e-03 0:00:04 1884

117 5.5672e-04 1.3716e-04 1.3859e-04 2.8708e-04 2.6592e-07 8.1785e-04 1.6069e-03 0:00:04 1883

118 4.9882e-04 1.1989e-04 1.2105e-04 2.5619e-04 2.4078e-07 7.3667e-04 1.4183e-03 0:00:03 1882

119 4.5020e-04 1.0482e-04 1.0542e-04 2.2995e-04 2.1164e-07 6.5615e-04 1.2335e-03 0:06:18 1881

120 4.0700e-04 9.2464e-05 9.2221e-05 2.0776e-04 1.9088e-07 5.8068e-04 1.0607e-03 0:05:03 1880

121 3.6738e-04 8.3267e-05 8.1732e-05 1.8886e-04 1.7752e-07 5.1100e-04 9.0614e-04 0:04:02 1879

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

122 3.3359e-04 7.5353e-05 7.3153e-05 1.7324e-04 1.6615e-07 4.4734e-04 7.7151e-04 0:03:13 1878

123 3.0567e-04 6.8193e-05 6.5736e-05 1.5906e-04 1.5808e-07 3.9254e-04 6.6576e-04 0:02:35 1877

124 2.8000e-04 6.1907e-05 5.9506e-05 1.4613e-04 1.4727e-07 3.4928e-04 5.8050e-04 0:02:04 1876

125 2.5648e-04 5.6632e-05 5.3969e-05 1.3441e-04 1.3880e-07 3.1635e-04 5.2397e-04 0:01:39 1875

126 2.3443e-04 5.2182e-05 4.9046e-05 1.2348e-04 1.2861e-07 2.8902e-04 4.9156e-04 0:01:19 1874

127 2.1429e-04 4.7905e-05 4.4794e-05 1.1344e-04 1.1949e-07 2.6648e-04 4.6486e-04 0:01:03 1873

128 1.9702e-04 4.3781e-05 4.1297e-05 1.0448e-04 1.0929e-07 2.4816e-04 4.4312e-04 0:00:51 1872

129 1.8119e-04 3.9872e-05 3.8146e-05 9.6445e-05 9.6612e-08 2.3623e-04 4.3553e-04 0:00:40 1871

130 1.6768e-04 3.6403e-05 3.5393e-05 8.9202e-05 8.4407e-08 2.2803e-04 4.3654e-04 0:00:32 1870

131 1.5433e-04 3.3413e-05 3.3077e-05 8.2602e-05 7.4439e-08 2.2145e-04 4.3713e-04 0:00:26 1869

132 1.4245e-04 3.0794e-05 3.0987e-05 7.6756e-05 6.6809e-08 2.1455e-04 4.3196e-04 0:00:21 1868

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

133 1.3101e-04 2.8530e-05 2.8984e-05 7.1638e-05 5.9152e-08 2.0797e-04 4.2314e-04 0:00:17 1867

134 1.2022e-04 2.6430e-05 2.7096e-05 6.7513e-05 5.3193e-08 2.0091e-04 4.1152e-04 0:00:13 1866

135 1.1029e-04 2.4606e-05 2.5400e-05 6.3781e-05 4.6809e-08 1.9300e-04 3.9769e-04 0:00:11 1865

136 1.0188e-04 2.2946e-05 2.3766e-05 6.0541e-05 4.3231e-08 1.8562e-04 3.8571e-04 0:00:08 1864

137 9.5505e-05 2.1424e-05 2.2200e-05 5.7790e-05 4.1362e-08 1.7881e-04 3.7202e-04 0:06:19 1863

138 8.9747e-05 1.9917e-05 2.0729e-05 5.5332e-05 4.2585e-08 1.7309e-04 3.5889e-04 0:05:03 1862

139 8.4423e-05 1.8485e-05 1.9380e-05 5.2984e-05 4.2929e-08 1.6718e-04 3.4462e-04 0:04:03 1861

140 7.9444e-05 1.7223e-05 1.8198e-05 5.0777e-05 4.2356e-08 1.6056e-04 3.2915e-04 0:03:14 1860

141 7.5090e-05 1.6254e-05 1.7154e-05 4.8844e-05 4.0974e-08 1.5374e-04 3.1333e-04 0:02:35 1859

142 7.2111e-05 1.5474e-05 1.6290e-05 4.7202e-05 4.1854e-08 1.4668e-04 2.9661e-04 0:02:04 1858

143 7.0218e-05 1.4809e-05 1.5526e-05 4.5721e-05 4.0419e-08 1.3942e-04 2.7993e-04 0:01:39 1857

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

144 6.8737e-05 1.4349e-05 1.4951e-05 4.4364e-05 3.9182e-08 1.3201e-04 2.6343e-04 0:01:19 1856

145 6.7057e-05 1.3944e-05 1.4515e-05 4.3035e-05 3.7320e-08 1.2429e-04 2.4619e-04 0:01:03 1855

146 6.5047e-05 1.3531e-05 1.4115e-05 4.1533e-05 3.5442e-08 1.1658e-04 2.2944e-04 0:00:51 1854

147 6.2781e-05 1.3106e-05 1.3720e-05 3.9910e-05 3.3133e-08 1.0936e-04 2.1358e-04 0:00:41 1853

148 6.0089e-05 1.2618e-05 1.3330e-05 3.8216e-05 3.0700e-08 1.0178e-04 1.9815e-04 0:00:32 1852

149 5.7052e-05 1.2084e-05 1.2874e-05 3.6567e-05 2.6376e-08 9.4331e-05 1.8377e-04 0:00:26 1851

150 5.3681e-05 1.1538e-05 1.2384e-05 3.4856e-05 2.3563e-08 8.7544e-05 1.7097e-04 0:00:21 1850

151 5.0078e-05 1.0995e-05 1.1887e-05 3.3159e-05 2.0645e-08 8.0989e-05 1.5921e-04 0:00:17 1849

152 4.6219e-05 1.0436e-05 1.1374e-05 3.1500e-05 1.8572e-08 7.5038e-05 1.4808e-04 0:00:13 1848

153 4.2570e-05 9.9008e-06 1.0897e-05 2.9906e-05 1.7877e-08 6.9847e-05 1.3826e-04 0:06:20 1847

154 3.9455e-05 9.4205e-06 1.0460e-05 2.8511e-05 1.8316e-08 6.5515e-05 1.2941e-04 0:05:04 1846

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

155 3.6996e-05 8.9684e-06 1.0041e-05 2.7212e-05 1.9315e-08 6.1707e-05 1.2155e-04 0:04:03 1845

156 3.5352e-05 8.5479e-06 9.6371e-06 2.6030e-05 1.8651e-08 5.8354e-05 1.1499e-04 0:03:14 1844

157 3.4106e-05 8.1532e-06 9.2161e-06 2.4830e-05 1.9534e-08 5.5042e-05 1.0883e-04 0:02:35 1843

158 3.3272e-05 7.7748e-06 8.7779e-06 2.3690e-05 1.9437e-08 5.2065e-05 1.0278e-04 0:02:04 1842

159 3.2553e-05 7.4015e-06 8.3167e-06 2.2615e-05 1.9381e-08 4.9529e-05 9.6818e-05 0:01:39 1841

160 3.1689e-05 7.0473e-06 7.8684e-06 2.1581e-05 1.7559e-08 4.7171e-05 9.0726e-05 0:01:19 1840

161 3.0712e-05 6.6842e-06 7.4394e-06 2.0497e-05 1.7453e-08 4.4741e-05 8.5666e-05 0:01:03 1839

162 2.9581e-05 6.3112e-06 7.0173e-06 1.9384e-05 1.6406e-08 4.2275e-05 8.0739e-05 0:00:51 1838

163 2.8248e-05 5.9258e-06 6.5632e-06 1.8278e-05 1.5493e-08 3.9700e-05 7.5616e-05 0:00:41 1837

164 2.6744e-05 5.5322e-06 6.0933e-06 1.7192e-05 1.3172e-08 3.7230e-05 7.0424e-05 0:00:32 1836

165 2.5065e-05 5.1523e-06 5.6021e-06 1.6108e-05 1.2381e-08 3.4744e-05 6.5584e-05 0:00:26 1835

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

166 2.3327e-05 4.7785e-06 5.1014e-06 1.5007e-05 1.0865e-08 3.2731e-05 6.2159e-05 0:00:21 1834

167 2.1449e-05 4.4073e-06 4.6343e-06 1.3942e-05 9.6113e-09 3.1182e-05 5.9422e-05 0:00:17 1833

168 1.9499e-05 4.0384e-06 4.2011e-06 1.2910e-05 7.6542e-09 3.0122e-05 5.7296e-05 0:00:13 1832

169 1.7544e-05 3.6839e-06 3.8058e-06 1.1981e-05 6.7003e-09 2.9491e-05 5.6345e-05 0:00:11 1831

170 1.5696e-05 3.3699e-06 3.4548e-06 1.1136e-05 5.7101e-09 2.9024e-05 5.5542e-05 0:00:08 1830

171 1.4067e-05 3.0887e-06 3.1681e-06 1.0381e-05 5.1544e-09 2.8433e-05 5.4402e-05 0:00:07 1829

172 1.2684e-05 2.8618e-06 2.9512e-06 9.7555e-06 5.2820e-09 2.7687e-05 5.2737e-05 0:00:05 1828

173 1.1568e-05 2.6869e-06 2.8031e-06 9.2215e-06 5.6518e-09 2.6778e-05 5.0661e-05 0:00:04 1827

174 1.0795e-05 2.5596e-06 2.7018e-06 8.7999e-06 5.5938e-09 2.5577e-05 4.8095e-05 0:00:03 1826

175 1.0312e-05 2.4707e-06 2.6141e-06 8.4448e-06 5.7755e-09 2.4098e-05 4.5066e-05 0:06:08 1825

176 9.9139e-06 2.3967e-06 2.5269e-06 8.1126e-06 5.8367e-09 2.2388e-05 4.1717e-05 0:04:54 1824

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

177 9.5754e-06 2.3349e-06 2.4511e-06 7.8021e-06 5.7834e-09 2.0538e-05 3.8149e-05 0:03:55 1823

178 9.2179e-06 2.2735e-06 2.3711e-06 7.4854e-06 5.6882e-09 1.8626e-05 3.4556e-05 0:03:08 1822

179 8.8459e-06 2.2131e-06 2.2822e-06 7.1614e-06 5.4989e-09 1.6682e-05 3.0996e-05 0:02:30 1821

180 8.5097e-06 2.1416e-06 2.1882e-06 6.8348e-06 4.8459e-09 1.4897e-05 2.7762e-05 0:02:00 1820

181 8.1864e-06 2.0532e-06 2.0852e-06 6.5043e-06 4.5809e-09 1.3417e-05 2.5291e-05 0:01:36 1819

182 7.8273e-06 1.9526e-06 1.9649e-06 6.1648e-06 4.2406e-09 1.2248e-05 2.3469e-05 0:01:17 1818

183 7.4395e-06 1.8429e-06 1.8325e-06 5.8094e-06 3.4853e-09 1.1509e-05 2.2246e-05 0:01:01 1817

184 6.9755e-06 1.7259e-06 1.6931e-06 5.4389e-06 3.1763e-09 1.1183e-05 2.1760e-05 0:00:49 1816

185 6.4412e-06 1.6027e-06 1.5547e-06 5.0669e-06 2.7731e-09 1.1087e-05 2.1810e-05 0:00:39 1815

186 5.8628e-06 1.4773e-06 1.4147e-06 4.7031e-06 2.2204e-09 1.1336e-05 2.2703e-05 0:00:31 1814

187 5.2889e-06 1.3502e-06 1.2771e-06 4.3585e-06 1.9103e-09 1.1768e-05 2.3778e-05 0:00:25 1813

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

188 4.7206e-06 1.2226e-06 1.1486e-06 4.0284e-06 1.6561e-09 1.2144e-05 2.4429e-05 0:00:20 1812

189 4.2157e-06 1.1179e-06 1.0336e-06 3.7361e-06 1.4405e-09 1.2411e-05 2.4662e-05 0:00:16 1811

190 3.7998e-06 1.0263e-06 9.4211e-07 3.4752e-06 1.4908e-09 1.2480e-05 2.4516e-05 0:00:13 1810

191 3.4499e-06 9.5868e-07 8.7961e-07 3.2461e-06 1.5996e-09 1.2374e-05 2.4041e-05 0:00:10 1809

192 3.1899e-06 9.1198e-07 8.3588e-07 3.0447e-06 1.5916e-09 1.2106e-05 2.3305e-05 0:00:08 1808

193 3.0872e-06 8.7953e-07 8.0858e-07 2.8775e-06 1.6628e-09 1.1654e-05 2.2219e-05 0:00:07 1807

194 3.0216e-06 8.5194e-07 7.9073e-07 2.7259e-06 1.7171e-09 1.1050e-05 2.0876e-05 0:00:05 1806

195 2.9525e-06 8.2779e-07 7.7296e-07 2.5810e-06 1.7535e-09 1.0322e-05 1.9328e-05 0:00:04 1805

196 2.9021e-06 8.0529e-07 7.5695e-07 2.4469e-06 1.6388e-09 9.5125e-06 1.7646e-05 0:06:04 1804

197 2.8510e-06 7.7983e-07 7.4230e-07 2.3160e-06 1.6544e-09 8.6422e-06 1.5883e-05 0:04:51 1803

198 2.7933e-06 7.5178e-07 7.2081e-07 2.1869e-06 1.6005e-09 7.7366e-06 1.4078e-05 0:03:53 1802

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

199 2.7155e-06 7.2334e-07 6.9414e-07 2.0567e-06 1.5431e-09 6.8223e-06 1.2280e-05 0:03:06 1801

200 2.6175e-06 6.9112e-07 6.6706e-07 1.9288e-06 1.4675e-09 5.9427e-06 1.0636e-05 0:02:29 1800

201 2.5073e-06 6.5507e-07 6.3599e-07 1.8057e-06 1.2725e-09 5.1432e-06 9.1751e-06 0:01:59 1799

202 2.3942e-06 6.1716e-07 6.0062e-07 1.6828e-06 1.2022e-09 4.4085e-06 7.8519e-06 0:01:35 1798

203 2.2705e-06 5.7823e-07 5.6146e-07 1.5614e-06 1.1044e-09 3.7396e-06 6.6626e-06 0:01:16 1797

204 2.1399e-06 5.3806e-07 5.2156e-07 1.4442e-06 9.0818e-10 3.1628e-06 5.6587e-06 0:01:01 1796

205 1.9991e-06 4.9732e-07 4.7993e-07 1.3329e-06 8.2574e-10 2.7217e-06 4.9241e-06 0:00:49 1795

206 1.8445e-06 4.5689e-07 4.3653e-07 1.2273e-06 7.2526e-10 2.3839e-06 4.3748e-06 0:00:39 1794

207 1.6805e-06 4.1801e-07 3.9343e-07 1.1287e-06 6.5495e-10 2.1517e-06 3.9646e-06 0:00:31 1793

208 1.5146e-06 3.7905e-07 3.5113e-07 1.0378e-06 5.1941e-10 2.0636e-06 3.8266e-06 0:00:25 1792

209 1.3539e-06 3.4015e-07 3.1166e-07 9.5263e-07 4.4925e-10 2.0386e-06 3.9021e-06 0:00:20 1791

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

210 1.1974e-06 3.0283e-07 2.7526e-07 8.7365e-07 3.9269e-10 2.0550e-06 3.9842e-06 0:00:16 1790

211 1.0522e-06 2.6732e-07 2.4384e-07 8.0249e-07 3.2381e-10 2.0964e-06 4.1259e-06 0:00:13 1789

212 9.3041e-07 2.3776e-07 2.1812e-07 7.4038e-07 3.0772e-10 2.1466e-06 4.2173e-06 0:00:10 1788

213 8.2702e-07 2.1679e-07 1.9722e-07 6.8683e-07 2.9380e-10 2.1736e-06 4.2354e-06 0:00:08 1787

214 7.4213e-07 2.0130e-07 1.8466e-07 6.3912e-07 3.0074e-10 2.1696e-06 4.1860e-06 0:00:06 1786

215 6.8594e-07 1.9164e-07 1.7618e-07 5.9887e-07 3.1092e-10 2.1334e-06 4.0854e-06 0:00:05 1785

216 6.5519e-07 1.8365e-07 1.7108e-07 5.6196e-07 2.9827e-10 2.0636e-06 3.9248e-06 0:00:04 1784

217 6.3153e-07 1.7736e-07 1.6744e-07 5.2836e-07 3.0388e-10 1.9674e-06 3.7082e-06 0:00:03 1783

218 6.1087e-07 1.7081e-07 1.6313e-07 4.9682e-07 3.0509e-10 1.8477e-06 3.4445e-06 0:00:03 1782

219 5.9118e-07 1.6434e-07 1.5875e-07 4.6570e-07 3.0186e-10 1.7077e-06 3.1510e-06 0:00:02 1781

220 5.7220e-07 1.5762e-07 1.5353e-07 4.3494e-07 2.7451e-10 1.5526e-06 2.8326e-06 0:00:02 1780

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

221 5.5380e-07 1.5078e-07 1.4707e-07 4.0391e-07 2.6776e-10 1.3884e-06 2.5018e-06 0:00:01 1779

222 5.3426e-07 1.4390e-07 1.3984e-07 3.7334e-07 2.5323e-10 1.2210e-06 2.1713e-06 0:00:01 1778

223 5.1117e-07 1.3640e-07 1.3205e-07 3.4367e-07 2.3507e-10 1.0584e-06 1.8661e-06 0:05:56 1777

224 4.8618e-07 1.2805e-07 1.2355e-07 3.1564e-07 1.9975e-10 9.0629e-07 1.5827e-06 0:04:45 1776

225 4.5822e-07 1.1903e-07 1.1456e-07 2.8849e-07 1.8256e-10 7.6565e-07 1.3270e-06 0:03:48 1775

226 4.2888e-07 1.0969e-07 1.0538e-07 2.6242e-07 1.6333e-10 6.3912e-07 1.1056e-06 0:03:02 1774

227 3.9804e-07 1.0038e-07 9.5994e-08 2.3732e-07 1.4386e-10 5.3148e-07 9.1980e-07 0:02:26 1773

228 3.6374e-07 9.1232e-08 8.6652e-08 2.1370e-07 1.1503e-10 4.4986e-07 7.8741e-07 0:01:56 1772

229 3.2751e-07 8.2267e-08 7.7263e-08 1.9179e-07 9.8707e-11 3.9344e-07 6.9852e-07 0:01:33 1771

230 2.9165e-07 7.3767e-08 6.8265e-08 1.7257e-07 8.6881e-11 3.5344e-07 6.3544e-07 0:01:14 1770

231 2.5688e-07 6.5962e-08 5.9720e-08 1.5534e-07 7.1989e-11 3.3389e-07 6.0166e-07 0:01:00 1769

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

232 2.2453e-07 5.8382e-08 5.1762e-08 1.3975e-07 7.0643e-11 3.2727e-07 6.0946e-07 0:00:48 1768

233 1.9447e-07 5.1237e-08 4.4817e-08 1.2598e-07 7.2518e-11 3.2699e-07 6.2583e-07 0:00:38 1767

234 1.6790e-07 4.4630e-08 3.9001e-08 1.1426e-07 6.7252e-11 3.2727e-07 6.4221e-07 0:00:30 1766

235 1.4499e-07 3.8602e-08 3.4363e-08 1.0442e-07 6.6581e-11 3.2857e-07 6.5345e-07 0:00:24 1765

236 1.2791e-07 3.3839e-08 3.0721e-08 9.5983e-08 6.2015e-11 3.2759e-07 6.4920e-07 0:00:19 1764

237 1.1431e-07 3.0423e-08 2.8006e-08 8.9133e-08 6.3213e-11 3.2064e-07 6.2864e-07 0:00:16 1763

238 1.0320e-07 2.8216e-08 2.6417e-08 8.3486e-08 6.3144e-11 3.0804e-07 5.9570e-07 0:00:12 1762

239 9.7387e-08 2.7051e-08 2.5362e-08 7.8872e-08 5.8143e-11 2.9028e-07 5.5353e-07 0:00:10 1761

240 9.5043e-08 2.6039e-08 2.4527e-08 7.4670e-08 5.7712e-11 2.6818e-07 5.0376e-07 0:00:08 1760

241 9.3257e-08 2.5137e-08 2.3854e-08 7.0455e-08 5.5725e-11 2.4290e-07 4.4944e-07 0:00:06 1759

242 9.0961e-08 2.4087e-08 2.3090e-08 6.6579e-08 5.2944e-11 2.1567e-07 3.9287e-07 0:00:05 1758

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

243 8.7744e-08 2.3051e-08 2.2196e-08 6.2741e-08 4.6465e-11 1.8894e-07 3.4040e-07 0:00:04 1757

244 8.3982e-08 2.1912e-08 2.1089e-08 5.8817e-08 4.4130e-11 1.6350e-07 2.9181e-07 0:00:03 1756

245 7.9732e-08 2.0626e-08 1.9805e-08 5.4848e-08 4.0336e-11 1.3960e-07 2.4743e-07 0:00:03 1755

246 7.5005e-08 1.9287e-08 1.8396e-08 5.0857e-08 3.6252e-11 1.1804e-07 2.0847e-07 0:00:02 1754

247 7.0085e-08 1.7822e-08 1.6907e-08 4.6899e-08 2.9868e-11 1.0063e-07 1.7864e-07 0:05:52 1753

248 6.4791e-08 1.6389e-08 1.5452e-08 4.2945e-08 2.6578e-11 8.7580e-08 1.5758e-07 0:04:42 1752

249 5.9540e-08 1.5011e-08 1.4051e-08 3.9281e-08 2.3334e-11 7.8024e-08 1.4242e-07 0:03:45 1751

250 5.4053e-08 1.3688e-08 1.2656e-08 3.5848e-08 1.8585e-11 7.2506e-08 1.3140e-07 0:03:00 1750

251 4.8612e-08 1.2388e-08 1.1316e-08 3.2819e-08 1.6066e-11 7.0376e-08 1.3154e-07 0:02:24 1749

252 4.3348e-08 1.1108e-08 1.0027e-08 3.0043e-08 1.3944e-11 6.9746e-08 1.3314e-07 0:01:55 1748

253 3.8387e-08 9.8721e-09 8.8414e-09 2.7542e-08 1.2065e-11 6.9022e-08 1.3428e-07 0:01:32 1747

iter continuity x-velocity y-velocity z-velocity energy k epsilon time/iter

254 3.3827e-08 8.6922e-09 7.9007e-09 2.5319e-08 1.1584e-11 6.8985e-08 1.3522e-07 0:01:14 1746

255 3.0052e-08 7.7895e-09 7.1444e-09 2.3408e-08 1.1921e-11 6.9034e-08 1.3351e-07 0:00:59 1745

256 2.6689e-08 7.1637e-09 6.5953e-09 2.1779e-08 1.1309e-11 6.8230e-08 1.3044e-07 0:00:47 1744

257 2.4196e-08 6.7093e-09 6.2675e-09 2.0386e-08 1.1409e-11 6.6469e-08 1.2596e-07 0:00:38 1743

258 2.2907e-08 6.3871e-09 6.0643e-09 1.9200e-08 1.1581e-11 6.3823e-08 1.2019e-07 0:00:30 1742

259 2.2118e-08 6.1543e-09 5.9289e-09 1.8079e-08 1.0755e-11 6.0493e-08 1.1290e-07 0:00:24 1741

260 2.1408e-08 5.9539e-09 5.7893e-09 1.7060e-08 1.0862e-11 5.6573e-08 1.0459e-07 0:00:19 1740

! 261 solution is converged

261 2.0896e-08 5.7348e-09 5.6389e-09 1.6070e-08 1.0650e-11 5.2134e-08 9.5513e-08 0:00:15 1739

Writing data to D:\2. UM - 2nd Sem\KQE 7001 - Research Project\. ANSYS Case\Case 2 - Test\Case 2 - Test_files\dp0\FLU-1\Fluent\SYS.ip ...

x-coord

y-coord

z-coord

pressure

x-velocity

y-velocity

z-velocity

temperature

k

epsilon

Done.

Calculation complete.

ANSYS Residuals – Oil (Case 2)