

ABSTRACT

The concept of a CR-submanifold of an almost Hermitian manifold was introduced by A. Bejancu. Since then, the geometry of a CR-submanifold in a Kaehler manifold has been extensively studied by numerous mathematicians. In this dissertation, we showed that with a few alterations, some of the results of a CR-submanifold of a Kaehler manifold can be generalized to a nearly-Kaehler manifold. For instance, B.Y. Chen proved that a CR-submanifold of a Kaehler manifold is a CR-product if and only if the condition $A_{\mathcal{D}}D = 0$ is satisfied. We managed to prove a similar result for a CR-submanifold of a nearly-Kaehler manifold. Furthermore, we also improved on a theorem of A. Bejancu which characterizes a CR-submanifold of an almost Hermitian manifold.

In addition, we also obtained some interesting results for a CR-submanifold of a quasi-Kaehler manifold. This includes a theorem on the necessary and sufficient condition for the distribution D^{\perp} to be integrable when the CR-submanifold is totally umbilical.

ABSTRAK

Konsep submanifold-CR dalam manifold hampir Hermitian telah diperkenalkan oleh A. Bejancu. Semenjak itu, geometri submanifold-CR dalam manifold Kaehler telah banyak dikaji oleh ramai ahli matematik. Dalam disertasi ini, kami menunjukkan bahawa dengan sedikit pengubaisuaian, setengah daripada keputusan submanifold-CR dalam manifold Kaehler boleh diperkembangkan kepada manifold dekat Kaehler. Sebagai contoh, B.Y. Chen telah membuktikan bahawa submanifold-CR dalam manifold Kaehler merupakan hasil daraban-CR jika dan hanya jika syarat $A_{Jp} \perp D = 0$ dipenuhi. Disini, kami membuktikan suatu keputusan yang hampir serupa dengan keputusan B.Y. Chen bagi submanifold-CR dalam manifold nearly-Kaehler. Tambahan juga, kami telah berjaya memperbaiki suatu theorem yang dibuktikan oleh A. Bejancu tentang cirian submanifold-CR dalam manifold hampir Hermitian.

Di samping itu, kami juga mendapat beberapa keputusan bagi submanifold-CR dalam manifold quasi-Kaehler. Ini meliputi suatu theorem mengenai pengamiran taburan D^\perp apabila submanifold-CR ini adalah umbilik keseluruhan.