

ABSTRACT

A survey of the geometry on the tangent bundles of Riemannian manifolds is conducted in the first two chapters. Specifically, the vertical lifts, the complete lifts and the horizontal lifts of tensor fields are considered. The nullity distribution on the tangent bundle of a Riemannian manifold is studied. The vertical and complete lifts of a vector field belonging to the nullity distribution on the base manifold are shown to be in the nullity distribution on the tangent bundle. Under certain regularity condition, the dimension of the nullity distribution on the tangent bundle of a Riemannian manifold is found to be twice that of the nullity distribution on base manifold. Geodesics on the tangent bundle with the Sasaki metric as its Riemannian metric are studied. The relation between the tangent vector field of a geodesic and the tangent vector field of the liftings of the curve is obtained.

ABSTRAK

Tinjauan bagi berkas tangen manifold Riemannian diberi dalam bab pertama dan bab kedua. Khususnya, lif cancangan, lif lengkap dan lif ufukan bagi medan tensor dipertimbangkan. Taburan kenolan pada berkas tangen manifold Riemannian dikaji. Lif cancangan dan lengkap suatu medan vektor dalam taburan kenolan pada manifold asas didapati berada dalam taburan kenolan pada berkas tangennya. Dengan syarat sekata tertentu, dimensi bagi taburan kenolan pada berkas tangen suatu manifold Riemannian didapati adalah dua kali ganda dimensi bagi taburan kenolan manifold asas. Geodesik pada berkas tangen dengan metrik Sasaki sebagai metrik Riemannannya dikaji. Hubungan diantara medan vektor tangen suatu geodesik dan medan vector tangen lif lengkungan itu diperolehi.