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Title of the Thesis: Geometry of Submanifolds and Their Applications

Finding

The study of geometry of submanifolds of a differentiable manifold is one of the most captivating topics of modern differential geometry. Sometimes it is convenient to immerse the given manifold into a Riemannian manifold with known geometry and then study the induced geometry on this Riemannian manifold. This leads to the study of geometry of submanifolds.

In this thesis, we first studied interpolating sesqui-harmonic slant curves in generalized Sasakian space form and find the necessary and sufficient conditions for slant curves to be interpolating sesqui-harmonic. Further, we study sesqui minimal slant curves in generalized Sasakian space form.

Next, we have discussed the geometry of contact CR-submanifolds of trans-S-manifold and SQ-Sasakian manifold. we obtain some basic results for contact CR-submanifold of trans-S-manifold and then studied contact CR-product and also we find a result for totally umbilical contact CR-submanifolds of trans-S-manifold. Also, we deal with f-biharmonic submanifold of T-space form, here we find a necessary and sufficient conditions for f-biharmonicity and discuss various cases. Lastly we have discussed point wise bi-slant doubly warped product submanifold of conformal Sasakian space form.