第13回 Irina Markina



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abstract

The study of curves in surfaces having constant geodesic curvature is an old problem in differential geometry, whose origin can be traced back to classic works by Bianchi and Darboux. The problem of determining which curves have constant geodesic curvature in the more general setting of manifolds of dimension three or higher is much more complicated.

In many examples curves of constant geodesic curvature appear as images under Riemannian submersions of so called normal sub-Riemannian geodesics. We give a characterization of the submersions from a sub-Riemannian manifold to a Riemannian manifold that map normal sub-Riemannian geodesics to curves with constant geodesic curvature. These submersions are precisely the ones for which the curvature operator is parallel in horizontal directions, with respect to any affine connection satisfying certain hypotheses.



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9 images

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