

Conifcation constructions in projective and c-projective geometries and the degree of mobility

Abstract:

Projectively equivalent metrics are those having the same geodesics; the projective degree of mobility of a metric g is the dimension of the space of metrics which are projectively equivalent to g . C-projectively equivalent metrics and c-projective degree of mobility is a generalisation of these notions to Kähler manifolds.

The main result of my talk will be a description of all possible values of the projective and c-projective degrees of mobility on a manifold of arbitrary dimension. The method is very geometric: I explain how projectively and c-projectively equivalent metrics are related to parallel tensors on the cone manifolds and how this geometric observation helps. If the time allows, I will also explain how these results helped to solve the classical Lichnerowicz and Yano-Obata conjectures.

The talk is based on joint results with A. Fedorova, S. Rosemann and V. Kiosak, and the mathematical background necessary to understand the talk does not go over the notion of geodesics of Riemannian metrics.

Prof. Dr. Vladimir Matveev