



Speaker: Luigi Verdiani
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Thursday, April 26, 2018

2:00 PM

258 Hurley Hall

Title: Invariant metrics on cohomogeneity one Riemannian manifolds

Abstract:

A cohomogeneity one Riemannian manifold M is a smooth Riemannian manifold, acted on by a subgroup G of the isometry group with a codimension one orbit. In many practical problems, the high degree of symmetry of M can be used to reduce certain PDE's to ODE's that are, in principle, easier to study. In fact this class has been used to produce many inhomogeneous examples of special Riemannian structures. The existence of a codimension one orbit in M implies that the union of the codimension one orbits is an open dense set in M . If M is compact and simply connected, then there are 2 orbits of higher codimension and, because of this, it is not trivial to describe all the smooth G -invariant metrics on M . During the talk we will discuss this problem and some applications to the local existence of Einstein metrics and obstructions to the existence of nonnegatively curved metrics on M .