Three dimensional manifolds with constant vector curvature.

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007 Kemeny Hall, 4:00 pm
(Tea 3:30 pm 300 Kemeny Hall)

Abstract

After a brief introduction to curvature, I will introduce a new curvature condition called constant vector curvature. A Riemannian manifold M has constant vector curvature k if each tangent vector to M belongs to a tangent plane of M of sectional curvature k.

For surfaces, having constant vector curvature is equivalent to having constant sectional curvatures. There are many more examples in dimension three, including the eight Thurston geometries. In joint work with Jon Wolfson, we classify the compact constant vector curvature three-manifolds. I'll outline this classification, presenting numerous examples along the way.

This talk should be accessible to graduate students