Department of Mathematics,
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Food For Thought Seminar

Henning Hohnhold

UCSD

Think global, act local

Abstract:

This talk will be a survey of local-to-global theorems in differential geometry. I will start out by giving some intuition about the curvature of Riemannian manifolds; this should be enough to get a feel for the results that I'll explain in the remainder of the talk. Then I'll begin to survey some results that link the local geometry (curvature) of the manifold to its global geometry. The idea is that sufficient knowledge about the local structure of a Riemannian manifold is sometimes enough to identify its global shape. Theorems of this kind are among the prettiest results in differential geometry and I will try to survey several of them, including the classification of spaces of constant sectional curvature, the Hadamard-Cartan theorem, and Klingenberg's sphere theorem. This talk should be very accessible, since many of the theorems can be understood intuitively. A bit like an index-free advertisement for differential geometry.

Thursday, January 24, 2008

11:00 AM

AP&M B412

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