Sophus Lie Days

October 10–11, 2013

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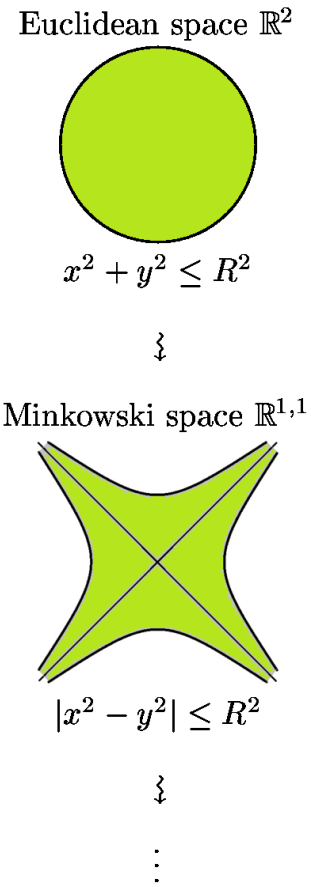
Lecture II – Global Geometry and Analysis on Locally pseudo-Riemannian Symmetric Spaces

The local to global study of geometries was a major trend of 20th century geometry, with remarkable developments achieved particularly in Riemannian geometry. In contrast, in areas such as Lorentz geometry, familiar to us as the space-time of relativity theory, and more generally in pseudo-Riemannian geometry of general signature, surprising little is known about global properties of the geometry even if we impose a locally homogeneous structure. Taking anti-de Sitter manifolds, which are locally modelled on AdS^n as an example, I plan to explain two programs:

1. *(global shape) Exisitence problem of compact locally homogeneous spaces, and defomation theory.*

2. *(spectral analysis) Construction of the spectrum of the Laplacian, and its stability under the deformation of the geometric structure.*



Lecture I will preceed this talk on Thursday, October 10 at 4:00 PM in 532 Malott Hall.

Friday, October 11, 2013 at 2:00 PM in 406 Malott Hall