Yale Mathematics Department Colloquium

Toshiyuki Kobayashi

University of Tokyo

Wednesday, April 17, 2019

"Global Analysis of Locally Symmetric Spaces with Indefinite-metric "

Time: 4:15 p.m. **Location: 215 LOM**

The local to global study of geometries was a major trend f 20th century geometry, with remarkable developments achieved particularly in Riemannian geometry. In contrast, in areas such as pseudo-Riemannian geometry, familiar to us as the spacetime 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. In this colloquium, I plan to discuss two topics. Global geometry : Existence problem of compact manifolds modelled locally on homogeneous spaces, and their deformation theory. Spectral analysis : Construction of periodic eigenfunctions for the (indefinite) Laplacian, and stability question of eigenvalues under deformation of geometric structure.

Refreshments will be available at 3:45 p.m. in the Mathematics Lounge.