Department of Mathematics and Statistics

COLLOQUIUM

Geometric Invariant Theory meets Riemannian Geometry

Consider a Lie group G with compact subgroup K. If we consider G-invariant metrics on G/K, what are the possible geometries this manifold admits? For example, can G/K have constant Ricci curvature? (i.e. does it admit homogeneous Einstein metrics?) What about positive or negative Ricci curvature?

Surprisingly, the answer to these questions is intimately related to the seemingly disparate field of Geometric Invariant Theory (GIT). In this talk, we will introduce GIT to understand the geometry orbits for particular GL_n R representations. Several examples will be given leading up to the connection between GIT and the problem of classifying non-compact, homogeneous Einstein spaces.

Dr. Michael Jablonski

University of Oklahoma

Friday, November 20
4:00 pm
PS 308

For colloquium attendees, light refreshments will be served in PS 317 from 3:30 – 4:00 pm