Speaker: Lawrence Moullie  
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Date: Thursday, October 25, 2018  
Time: 2:00 PM  
Location: 258 Hurley Hall

Lecture Title:  
Maximal torus symmetry and intermediate Ricci curvatures

Abstract

Wilking established an alternate proof of the Grove-Searle symmetry rank bound that only required quasi-positive sectional curvature and relied only on the Gauss equation. I’ve generalized this argument to produce a symmetry-rank bound in the setting of positive intermediate Ricci curvature: If $M$ is n-dimensional and has $\text{Ric}_k > 0$, then $\text{symrank}(M) \leq [(n + k)/2]$. Furthermore, I observed that the argument only requires commuting Killing fields around a point where $\text{Ric}_k > 0$, and thus the global torus action is not required. I can outline a procedure for creating warped products that have maximal "local symmetry-rank", and I have work-in-progress showing that any Riemannian manifold is close (in the $C^0$ or possibly $C^1$ topology, this is to be determined) to one that has quasi-positive curvature and maximal "local symmetry rank".