

Texas Geometry and Topology Conference
Meeting 32. Texas A&M University, October 29-31, 2004

Charles Boyer, University of New Mexico, *Einstein Metrics on Spheres*

I outline a procedure of K. Galicki and myself that uses methods of algebraic geometry to prove the existence of Einstein metrics on certain odd dimensional manifolds which arise as the total space of generalized Seifert bundles over projective algebraic varieties with orbifold structures. I then describe joint work with J. Kollár and K. Galicki which uses this procedure to produce a plethora of Einstein metrics on odd dimensional spheres including exotic spheres. Many of these Einstein structures occur with huge moduli spaces, and they give the first known examples of Einstein metrics on exotic spheres.