ABSTRACT:

C. Leininger

# Exotic compact quotients of $PSL(2,C)$.

Given a discrete, torsion free subgroup $\Gamma < PSL(2,C)$, the quotient $\Gamma \setminus PSL(2,C)$ is an $SO(3)$--bundle over the associated hyperbolic 3--manifold $\Gamma \setminus H^3$, but is also an example of a complete holomorphic Riemannian manifold of constant curvature. Ghys studied deformations of these structures to a more general class of $PSL(2,C)$ quotients, and this theory was expanded and further studied by Kobayashi and Gueritaud-Kassel. By a result of Tholozan, the volume of compact quotients remains constant under these deformations, and he asked whether there were ``exotic'' compact quotients, i.e. bundles over compact hyperbolic manifolds with different volume than the standard $SO(3)$--bundle. Building on a construction of Agol and the work of Gueritaud--Kassel, we describe an infinite family of such exotic compact quotients, and calculate their volumes using Tholozan's volume formula. This is joint work with Grant Lakeland.