

DIFFERENTIAL GEOMETRY/PDE SEMINAR

WEDNESDAY, NOVEMBER 9, 2016

PADEL FORD C-36

4PM–5PM

Exotic compact quotients of $SO(d,1)$

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Given a discrete, torsion free subgroup $\Gamma < SO(d, 1)$, the quotient $\Gamma \backslash SO(d, 1)$ is an $SO(d)$ –bundle over the associated hyperbolic d –manifold $\Gamma \backslash H^d$. For $d = 3$, this 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 $SO(3, 1)$ 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 $SO(d)$ –bundle. Building on a construction of Agol and the work of Gueritaud–Kassel, we describe an infinite family of such exotic compact quotients for $d \leq 4$, and calculate their volumes using Tholozan's volume formula. This is joint work with Grant Lakeland.

For more information about this seminar, visit the DG/PDE Seminar Web page (from the Math Department home page, www.math.washington.edu, follow the link **Seminars, Colloquia, and Conferences**).

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