

DIFFERENTIAL GEOMETRY/PDE SEMINAR

WEDNESDAY, MAY 19, 2010

PADELFORD C-36

4–5PM

Bundle Construction of Einstein Manifolds

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In this talk, I will describe some explicit constructions of complete Einstein manifolds with nonzero Einstein constants, and then investigate the topological and geometric properties of these new Einstein manifolds.

In the case of negative Einstein constants, we are able to construct conformally compact Einstein metrics on 1. products of an arbitrary closed Einstein manifold and a certain even-ball bundle over products of Kahler-Einstein manifolds, 2. certain solid-torus bundles over a Fano Kahler-Einstein manifold. We compute the associated conformal invariants, i.e., the renormalized volume in even dimensions and the conformal anomaly in odd dimensions. As by-products, we obtain many Riemannian manifolds with vanishing Q-curvature.

In the case of positive Einstein constants, we are able to construct Einstein metrics on certain 3-sphere bundles over a Fano Kahler-Einstein manifold. We classify the homeomorphism and diffeomorphism types of the total spaces when the base manifold is the complex projective plane CP^2 .

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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