Oberseminar Geometrie und Topologie

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Locally conformaly product manifolds

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Abstract: A locally conformaly product (LCP) structure on a compact manifold *M* is a the data of a conformal class *c* and a closed, non-exact, non-flat Weyl connection *D* with reducible holonomy. This structure induces a Riemannian metric h_D on the universal cover $\widetilde{M}$ of *M*, uniquely defined up to a constant factor, for which $\pi_1(M)$ acts by similarities. It was recently proved that $(\widetilde{M}, h_D)$ is a Riemannian product $R^q \times (N, g_N)$where $g_N$is an irreducible, incomplete Riemannian manifold.

In this talk we present some properties and examples of LCP manifolds. We emphasize the link between LCP structures and number theory, and we show how one can initiate a classification of these structures.

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