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HYPERBOLIC MANIFOLDS WITH NEGATIVELY CURVED EXOTIC TRIANGULATIONS IN DIMENSIONS GREATER THAN FIVE

F.T. FARRELL, L.E. JONES & P. ONTANEDA

Rigidity results state that, under certain conditions, two homotopically equivalent manifolds are isomorphic (e.g. diffeomorphic, PL homeomorphic, homeomorphic). Among those results are, for example, Mostow's rigidity theorem, and the topological rigidity of closed non-positively curved manifolds (Farrell and Jones). Also, in [1], examples were given showing the lack of differentiable rigidity for negatively curved manifolds of dimensions larger than six, and in [3], examples were given of the lack of PL rigidity (that implies lack of differentiable rigidity) for negatively curved manifolds of dimension six. Explicitly, the following theorem appears in [3]:

1. Theorem. *There are closed real hyperbolic manifolds M of dimension 6, such that the following holds. Given $\epsilon > 0$, M has a finite cover $\tilde{M}$ that supports an exotic (smoothable) PL structure that admits a Riemannian metric with sectional curvatures in the interval* $(-1-\epsilon, -1+\epsilon)$.

(By an exotic PL structure on a hyperbolic manifold we mean a PL structure not PL homeomorphic to the PL structure induced by the differentiable structure of the hyperbolic manifold.)

In this short paper we generalize this result to all dimensions greater than five:

2. Theorem. *There are closed real hyperbolic manifolds M in every dimension n, $n > 5$, such that the following holds. Given $\epsilon > 0$, M has*

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