

**Meeting:** 999, Nashville, Tennessee, SS 3A, Special Session on Index Theory and the Topology of Manifolds

999-53-277

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**Theorem:** Let  $G$  be a cocompact Fuchsian group. A closed Spin manifold of dimension greater than four whose fundamental group is isomorphic to  $G$  admits a metric of positive scalar curvature if and only if the index of the Dirac operator in the K-theory of the reduced  $C^*$ -algebra of  $G$  vanishes.

This theorem is proven using K-theory computations and the Baum-Connes Conjecture. (Received August 24, 2004)