

Moduli Spaces of Riemannian Metrics with Positive Scalar Curvature on Topological Spherical Space Forms

Philipp Reiser

(Karlsruhe)

Abstract:

Let M be a spherical space form of dimension at least 5 which is not simply-connected. Then the moduli space of Riemannian metrics with positive scalar curvature on M has infinitely many path components as shown by Boris Botvinnik and Peter B. Gilkey in 1996. We will review this theorem which involves twisted spin structures, suitable bordism groups and eta invariants. We then show that it can be generalized to the class of topological spherical space forms, i.e. smooth manifolds whose universal cover is a homotopy sphere.

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