



复旦大学数学科学学院 数学综合报告会

报告题目: Spectral Flow, Eta Invariant and Llarull's Rigidity Theorem in Odd Dimensions

报告人: 李一寒 助理研究员 (南开大学数学科学学院)

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报告摘要:

In this talk, I will present the application eta invariant and spectral flow on the proof of the odd-dimensional part of Llarull's Theorem and its extensions. Generally speaking, Atiyah-Singer index theory is one of the major tools in the study of Riemannian metrics of positive scalar curvature. In odd dimensions, the spectral flow of a family twisted Dirac operators on a compact spin manifold can be used to provide a direct proof of Llarull's rigidity theorem and the so-called "spin-area convex extremality theorem". Furthermore, combining with the deformed Dirac operator introduced by Bismut and Cheeger, this method can be used to prove noncompact extension of Llarull's theorem, which provides an ultimate answer to a question by Gromov. This is a joint work with Guangxiang Su, Xiangsheng Wang and Weiping Zhang.

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