



北京理工大学

数学与统计学院学术报告

Spectral flow, Llarull's rigidity theorem and its generalization

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摘要: For a compact spin Riemannian manifold (M, g^{TM}) of dimension n such that the associated scalar curvature k^{TM} verifies that $k^{\text{TM}} \geq n(n-1)$, Llarull's rigidity theorem says that any area decreasing smooth map f from M to the unit sphere \mathbb{S}^n of nonzero degree is an isometry. We present in this talk a new proof for Llarull's rigidity theorem in odd dimensions via a spectral flow argument. This approach also works for a generalization of Llarull's theorem when the sphere \mathbb{S}^n is replaced by an arbitrary smooth strictly convex closed hypersurface in \mathbb{R}^{n+1} . The results answer two questions by Gromov.

This is a joint work with Guangxiang Su and Xiangsheng Wang.

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