



复旦大学数学科学学院  
数学综合报告会

报告题目: **创新研究群体学术报告-A new invariant of metrics on the 2-sphere**

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报告地点: 光华东主楼 1801

摘要: Given a metric  $g$  on the 2-sphere  $S^2$ , we introduce a new invariant of  $g$  that is motivated by the quasi-local mass problem in general relativity. The new invariant is defined as the supremum of the total boundary mean curvature of all compact 3-Riemannian manifolds with nonnegative scalar curvature, with mean-convex boundary that is isometric to  $(S^2, g)$ . The finiteness of this supremum follows from the earlier work of Wang-Yau and Shi-Tam on manifolds with a negative scalar curvature lower bound. We will discuss properties of this invariant and its relativistic implication. The talk is based on joint work with Christos Mantoulidis.

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