POSITIVE MASS THEOREM AND POSITIVE SCALAR CURVATURE FOR SINGULAR METRICS

Speaker: Changliang Wang
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Time: Thu, March 27th, 10:30 - 11:30
Venue: Room 102, SCMS

Abstract:

The positive mass theorem of Schoen-Yau and Witten is one of the fundamental results about scalar curvature. It is closely related to the existence problem of positive scalar curvaure metrics. The studies of weak notions of positive scalar curvature motivate to the studies of these problems for singular metrics. In this talk, I will review some previous results and report our recent works on this topic. In a joint work with Prof. Xianzhe Dai and Dr. Yukai Sun, we prove a positive mass theroem and a Geroch type theorem for metrics with isolated conical singularities. More recently, in a joint work with Prof. Xianzhe Dai, Prof. Lihe Wang and Prof. Guofang Wei, we obtain a Geroch type result for uniformly Euclidean metrics, including a smooth extension result for uniformly Euclidean metric with nonnegative scalar curvature. This partially confirms a Schoen's conjecture for isolated singularity on connected sums of torus and compact manifolds.