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Joint Geometric Analysis Seminar

(Part of MIST program)

A Conformal Geometry Approach to the Manifolds with Positive Scalar Curvature

Dr. Jie Xu
Boston University

Abstract

Conformal geometry as a branch of the Riemannian geometry has a long history and involves many interesting and important problems like the Yamabe problem, the Kazdan-Warner problem, a spinorial and geometrical-analytic approach to the manifolds with positive scalar curvature (PSC), and general relativity. Geometric analysis plays a central role in many remarkable progresses of conformal geometry.

On compact manifolds $(M_n, \partial M, g)$, with or without boundary, $n > 3$, I will discuss a new approach of understanding prescribing scalar curvature and mean curvature problems within the conformal class $[g]$, or the local version on some open sub-manifolds of $(M_n, \partial M, g)$. I will then show some topological obstructions on PSC compact spin manifolds with boundary of dimension $4k$, $k \in \mathbb{N}$.

Date: March 17, 2023 (Friday)

Time: 11:00am-noon (Hong Kong time)

ZOOM link: <https://cuhk.zoom.us/j/91805734715>

All are Welcome