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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*