



Department of Mathematics
The Institute of Mathematical Sciences
The Chinese University of Hong Kong

數學系
數學科學研究所
香港中文大學

Phone: (852) 3943 7988 • Fax: (852) 2603 5154 • Email: dept@math.cuhk.edu.hk (Math. Dept.)
Room 220, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong

Joint Geometric Analysis Seminar

(Part of MIST program)

Twisted S^1 stability and positive scalar curvature obstruction on fiber bundles

Mr. Shihang He
Peking University

Abstract

In their pioneering work in 1979, Schoen-Yau developed a dimension reduction method to study manifolds with positive scalar curvature metric. Their method is based on solving a stable minimal surface in a codimension 1 homology class, which could always be regarded as the dual of certain closed curve. Owing to this crucial observation, the S^1 factor plays very important role in the study of positive scalar curvature. The S^1 stability conjecture, made by Rosenberg, states that for a compact manifold, the property of possessing positive scalar curvature metric is always preserved when multiplying S^1 . In this talk, we will first review classical results and recent developments about positive scalar curvature. Then we will discuss some progress on a generalized twisted version of the above S^1 stability conjecture, as well as results for positive scalar curvature obstruction on fiber bundles.

Date: 4 March 2024 (Monday)

Time: 10:30 am-11:30 am

Venue: AB1 501a

All are Welcome