



SCMS Seminar

GLOBAL RIGIDITY FOR HIGHER RANK GROUP ACTIONS ON MANIFOLDS: ZIMMER PROGRAM AND KATOK- SPATZIER CONJECTURE

Speaker: Disheng Xu
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Time: Wednesday, October 29th; 15:30

Venue: Room 102, SCMS

Abstract:

Zimmer's superrigidity theorems on higher rank Lie groups and their lattices launched a program of study aiming to classify actions of semisimple Lie groups and their lattices, known as the Zimmer program. When the group is too large relative to the dimension of the phase space, the Zimmer conjecture predicts that the actions are all virtually trivial. At the other extreme, when the actions exhibit enough regular behavior, the actions should all be of algebraic origin. We make progress in the program by showing smooth conjugacy to a bi-homogeneous model for volume-preserving actions of semisimple Lie groups without compact or rank one factors, under mild assumptions: partial hyperbolicity for “many” of elements and accessibility. We also obtain classification for actions of higher-rank abelian groups under certain hyperbolicity assumptions, i.e. progress to the (generalized) Katok-Spatzier conjecture. Joint work with D. Damjanovic, R. Spatzier and K. Vinhage.