

abstract

LIE GROUPS, REPRESENTATIONS AND DISCRETE MATH

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

We analyze volume-preserving actions of product groups on Riemannian manifolds. Under a natural spectral irreducibility assumption, we prove the following dichotomy: Either the action is measurably isometric, in which case there are at most two factors; or the action is infinitesimally linear, which means that the derivative cocycle arises from a linear representation of the acting groups. As a first application, this provides lower bounds on the dimension of the manifold in terms of the number of factors in the acting group. Another application is a strong restriction for actions of non-linear groups. We prove our results by means of a new cocycle superrigidity theorem of independent interest, in analogy to Zimmer's programme.

This is a joint work with Nicolas Monod.