RAUL QUIROGA, Cimat–Cinvestav

Superrigidity, semisimple Lie groups and pseudoRiemannian geometry

Consider a smooth action of a simple noncompact Lie group G on a compact manifold M preserving some sort of geometric structure. The work led by Zimmer, among others, has shown that such actions are extremely rigid in the sense that there are strong restrictions on the manifold M. A conjecture of Zimmer states that, in the presence of a finite G-invariant ergodic measure, such manifold M is essentially of the form $M = K\backslash H/\Gamma$, where H is a Lie group containing G as a subgroup, Γ is a lattice in H and K is a compact subgroup of H that centralizes G. In this talk we will discuss some advances in proving such conjecture in the case where M is a pseudoRiemannian manifold and G acts preserving the pseudoRiemannian metric of M.