

Meeting: 1006, Lubbock, Texas, SS 15A, Special Session on Discrete Groups, Homogeneous Spaces, Rigidity

1006-37-83 **Benjamin I Schmidt*** (bischmid@umich.edu), Ann Arbor, MI 48104. *Weakly hyperbolic actions of Kazhdan groups on tori.*

A group action on a closed Riemannian manifold is weakly hyperbolic provided there is a finite family of group elements acting by partially hyperbolic diffeomorphisms with stable distributions jointly spanning all tangent directions. We show that C^2 volume preserving weakly hyperbolic actions are ergodic, generalizing this well known fact for Anosov diffeomorphisms. Additionally we show that for actions of lattices in higher rank semisimple Lie groups on tori with a fixed point the property of weak hyperbolicity is inherited by the affine action coming from the induced action on the fundamental group. Combining this with the work of Margulis and Qian yields that all such actions are continuously semiconjugate to affine actions. Under an additional geometric hypothesis we show this semiconjugacy is a homeomorphism. (Received February 07, 2005)