INVARIANT MEASURES ON $SL(n, \mathbb{R})/\Gamma$

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Abstract

Let $X = \operatorname{SL}(n, \mathbb{R})/\Gamma$ be the right quotient with respect to a lattice Γ . We consider the left action α of the diagonal subgroup, often called the Weyl chamber flow. Invariant measures on X include the Haar measure λ and measures on compact orbits of α . For n = 3 M. Rees constructed a lattice for which a variety of other ergodic measures exist – some of them give positive entropy to some individual maps of the flow.

In this talk we will present conditions on an invariant measure (in terms of entropy and conditional measures) each of which characterizes the Haar measure. This can be seen as a first step towards measure rigidity for the Weyl chamber flow. A part of this result has been outlined at the end of [1].

References

 A. Katok and R. J. Spatzier. Invariant measures for higher-rank hyperbolic abelian actions. Ergodic Theory Dynam. Systems, 16(4):751–778, 1996.