Ann. Sc. Norm. Super. Pisa Cl. Sci. (5)
Vol. XXIII (2022), 1491-1506

Polynomial mixing for time-changes of unipotent flows

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Abstract. Let G be a connected semisimple Lie group with finite centre, and let $M = \Gamma\backslash G$ be a compact homogeneous manifold. Under a spectral gap assumption, we show that smooth time-changes of any unipotent flow on M have polynomial decay of correlations. Our result applies also in the case where M is a finite volume, non-compact quotient under some additional assumptions on the time-change. This generalizes a result by Forni and Ulcigrai for smooth time-changes of horocycle flows on compact surfaces.

Mathematics Subject Classification (2020): 37A25 (primary); 37C40 (secondary).