Furstenberg Transformations on Cartesian Products of Infinite Dimensional Tori

Cecchi, P. A., & de Aldecoa, R. T. (2016). Furstenberg transformations on cartesian products of infinite-dimensional tori. Potential Analysis, 44(1), 43-51. <10.1007/s11118-015-9497-y> Accessed 26 Dec 2020.

Abstract

We consider in this note Furstenberg transformations on Cartesian products of infinite-dimensional tori. Under some appropriate assumptions, we show that these transformations are uniquely ergodic with respect to the Haar measure and have countable Lebesgue spectrum in a suitable subspace. These results generalise to the infinite-dimensional setting previous results of H. Furstenberg, A. Iwanik, M. Lemanzyk, D. Rudolph and the second author in the one-dimensional setting. Our proofs rely on the use of commutator methods for unitary operators and Bruhat functions on the infinite-dimensional torus.