

Tikhonov, S. V.

Complete metric on mixing actions of general groups. (English) Zbl 1260.37004
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Let (X, Σ, μ) be a Lebesgue probability space and let \mathcal{A} be its group of invertible measure-preserving transformations with the weak topology. In this paper, continuous homomorphisms of a topological group \mathcal{G} into \mathcal{A} , are studied (\mathcal{G} -actions).

The measure preserving \mathcal{G} -action $\{T^g\}_{g \in \mathcal{G}}$ is “mixing” if for any $A, B \in \Sigma$,

$$\mu(T^g A \cap B) \rightarrow \mu(A)\mu(B) \quad \text{as } g \rightarrow \infty.$$

Continuing the author’s study of \mathbb{Z} -actions in [Sb. Math. 198, No. 4, 575–596 (2007; Zbl 1140.37005)], the general case of countably infinite groups is considered. It is the purpose of this paper to give a metric on the set $\mathcal{M}_{\mathcal{G}}$ of the set of mixing actions of \mathcal{G} so that $\mathcal{M}_{\mathcal{G}}$ is a complete and separable metric space.

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MSC:

- [37A25](#) Ergodicity, mixing, rates of mixing
- [28D05](#) Measure-preserving transformations
- [37A05](#) Dynamical aspects of measure-preserving transformations
- [37A15](#) General groups of measure-preserving transformations and dynamical systems

Cited in 1 Document

Keywords:

complete separable metric space

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- [3] S. V. Tikhonov. Mixing transformations with homogeneous spectrum. *Sb. Math.* 202 (2011), No. 8, 1231–1252. · [Zbl 1247.37008](#) · [doi:10.1070/SM2011v202n08ABEH004185](https://doi.org/10.1070/SM2011v202n08ABEH004185)

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