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 $A, B \in \Sigma$,

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

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.

Reviewer: Geoffrey R. Goodson (Towson)

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

Keywords:

complete separable metric space

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