Representation of groups in infinite-dimensional Hilbert space equipped with an invariant measure

V. Zh. Sakbaev [1]

Keywords: finitely-additive measure; shift-invariant measure on an infinite-dimensional space; unitary representation of a group.

MSC2020 codes: 28C20, 28D05, 37A05

Finitely-additive measures invariant to the action of the group of shifts on a separable infinite-dimensional real Hilbert space are considered (see [1]). A considered invariant measure is locally finite, σ-finite, but it is not countably additive. The analog of ergodic decomposition of invariant finite-additive measure with respect to the group of shifts are obtained. The set of different invariant with respect to a group measures is parametrized by the obtained decomposition. A ring-ergodic component of this decomposition is used to obtain the irreducible representation of a group.

References

[1] V. Glazatov, V. Sakbaev. *Measures on a Hilbert space that are invariant with respect to Hamiltonian flows.* // Ufimsk. Mat. Zh. 2022. Vol. 14. No. 2. P. 3–22.

---

[1]Keldysh Institute of Applied Mathematics of RAS, Russia, Moscow. Ufa Federal Research Center of RAS, Institute of Mathematics with Computing Center, Russia, Ufa. Email: fumi2003@mail.ru