Seminarium geometrów

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Property (T), quantitative Wang's theorem, and generic unitary representations

Abstract: One of the definitions of property (T) is that a group G has (T) if every unitary representation of G that weakly contains the trivial representation actually contains it strongly. This automatically generalizes into two different directions: One is a quantitative version of that statement saying that almost invariant vectors are 'close' to invariant vectors. The second is the Wang's theorem which allows us to substitute any finite-dimensional irreducible representation for the trivial representation from the original definition. We unify these two generalizations by proving a quantitative version of the Wang's theorem. We provide several applications of that result. One of them concerns description of 'generic unitary representations', i.e. unitary representations whose unitary equivalence class is generic in the sense of Baire category. This is based on joint work with Maciej Malicki and Alain Valette.