Fredholm modules and discrete groups

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Abstract

After a short introduction and the presentation of some relevant examples, we will discuss links between the theory of finitely summable Fredholm modules over discrete groups and the rigidity theory of affine isometric group actions. The main part of the lecture series will be devoted to an overview of Vincent Lafforgue’s recent proof of the Baum-Connes Conjecture with coefficients for word-hyperbolic groups. Finally, we present a first counterexample to the rational injectivity of the bivariant Chern-Connes character, which is provided by suitable Fredholm modules over word-hyperbolic groups with Kazhdan’s Property (T).