Structure of crossed product C^*-algebras

Zhuang Niu
(University of Wyoming)

Abstract

Consider a dynamical system, and let us study the structure of the corresponding crossed product C^*-algebra, in particular on the classifiability, comparison, and stable rank. More precisely, let us introduce a uniform Rokhlin property and a relative comparison property (these two properties hold for all free and minimal $\mathbb{Z}^d$ actions, and it is plausibly that they hold for all free and minimal actions by an arbitrary amenable group). With these two properties, the crossed product C^*-algebra is shown to always have stable rank one, to satisfy the Toms-Winter conjecture, and that the comparison radius is dominated by half of the mean dimension of the dynamical system. If time permits, let us also discuss C^*-dynamical systems and groupoids.