

A notion of almost finiteness for C^* -dynamical systems and its relation to dynamical strict comparison

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Abstract

We introduce the notion of noncommutative castle in a C^* -dynamical system, thus generalising the corresponding notion coming from actions of discrete groups on compact metric spaces. This is used to propose an extension of Kerr's almost finiteness for minimal actions on general C^* -algebras, by combining approximations of the action and the algebra up to a small remainder, measured in the dynamical Cuntz semigroup. We term such systems almost elementary, and this notion may be considered as a dynamical generalization of Z -stability. This extension admits a number of possible variations, essentially related to how smallness of the above mentioned remainder is measured. If time permits we shall discuss some of them.

This talk is based on joint work with Joan Bosa, Jianchao Wu, and Joachim Zacharias.