Rigidity of Roe algebras

Kang Li
KU Leuven
kang.li@kuleuven.be

(Uniform) Roe algebras are C^*-algebras associated to metric spaces, which reflect coarse properties of the underlying metric spaces. It is well-known that if X and Y are coarsely equivalent metric spaces with bounded geometry, then their (uniform) Roe algebras are (stably) $*$-isomorphic. The rigidity problem refers to the converse implication. The first result in this direction was provided by Ján Špakula and Rufus Willett, who showed that the rigidity problem has a positive answer if the underlying metric spaces have Yu's property A. I will in this talk review all previously existing results in literature, and then report on the latest development in the rigidity problem. This is joint work with Ján Špakula and Jiawen Zhang.