Set theory workshop

Integer cost and ergodic actions

Anush Tserunyan (UIUC)

Abstract: A countable Borel equivalence relation E on a probability space can always be generated in two ways: as the orbit equivalence relation of a Borel action of a countable group and as the connectedness relation of a locally countable Borel graph, called a graphing of E. Assuming that E is measure-preserving, graphings provide a numerical invariant called cost, whose theory has been largely developed and used by Gaboriau and others in establishing rigidity results. A well-known theorem of Hjorth states that when E is ergodic, treeable (admits an acyclic graphing), and has integer or infinite cost $n \leq \infty$, then it is generated by an a.e. free measure-preserving action of the free group F_n on n generators. We give a simpler proof of this theorem and the technique of our proof, combined with two other new tools, yields a strengthening of Hjorth's theorem: the action of F_n can be arranged so that each of the n generators acts ergodically. This is joint work with Benjamin Miller.

Saturday, October 22 at 11:00 AM in SEO 636