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Boundary amenability of groups via ultrapowers

A group Γ is said to act amenably on a compact space X if there is a net of functions $x \mapsto \mu_n^x$ from X to the set of probability measures on Γ that is uniformly almost invariant. Thus, in this terminology, a group is amenable if and only if it acts amenably on a one point space. More generally, a group is *boundary amenable* if it acts amenably on some compact space.

In this talk, we present a novel approach to showing that certain groups are boundary amenable. The approach uses ultrapowers of C*-algebras. We show how this technique can be used to give a new proof of a well-known result, namely that groups that act properly and isometrically on a tree are boundary amenable. We will also mention how this approach might be useful to settle the question of whether or not Thompson's group is boundary amenable.

This work is joint with Stephen Avsec.