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Hyperfiniteness of boundary actions of groups

Groups with some notion of negative curvature (such as free groups, and more generally hyperbolic groups and their various generalizations) have a notion of a boundary at infinity, which is a Polish space on which the group acts by homeomorphisms. The actions of such groups on their boundaries have been shown to furnish examples of hyperfinite orbit equivalence relations, and hence have been of interest in descriptive set theory. We survey results on hyperfiniteness of boundary actions of various "negatively curved" groups, beginning with the simple case of free groups and demonstrating how the methods for free groups are applied to more general groups. We show, however, that these methods break down at the level of generality of "acylindrically hyperbolic groups", by outlining a construction of an acylindrically hyperbolic group exhibiting a non-hyperfinite boundary action.