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Amenability and Poisson Boundaries

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Amenability is a natural generalization of finiteness and is, arguably, the most important analytic property of an infinite group. In the course I will first give a brief survey of amenability of groups and groupoids (in particular, actions and equivalence relations). The Poisson boundary, on the other hand, provides the most natural example of amenable actions arising from non-amenable groups. It turns out that amenability can actually be characterized in terms of triviality of appropriate Poisson boundaries. I will discuss the corresponding results and outline the main problems in the area.