

Giulio TIOZZO

Title: The Poisson boundary of hyperbolic groups without moment conditions

In complex analysis, the Poisson representation formula yields a duality between bounded, harmonic functions, and their boundary values.

This formula is closely related to the dynamics of $SL(2, \mathbb{R})$. The theory can be extended to the setting of discrete groups, yielding the notion of Poisson-Furstenberg boundary, a measure-theoretic object attached to a group equipped with a probability measure.

In many cases, the group is also endowed with a topological boundary arising from its geometric structure, and a recurring research theme is to discuss the relation between the two notions of boundary. The fundamental work of Kaimanovich yields an identification of Poisson boundaries of many groups, e.g. hyperbolic groups, with their geometric boundaries, under some moment conditions on the measure, while the general case is still open.

We settle the identification problem for all measures with finite entropy.

Joint with K. Chawla, B. Forghani, and J. Frisch.