

Integral criteria of hyperbolicity of graphs and groups.

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I will talk about recent results obtained jointly with Leonid Potyagailo, concerning various criteria of hyperbolicity in terms of integral geometry. Certain properties of a random walk on a group are equivalent to the hyperbolicity of the group. Probabilistic methods provide a new perspective on the geometry of a group. We are mainly interested in versions of the Ancona inequality, that relates the probabilistic and geometric properties.

These results are partially included in a paper submitted to the volume dedicated to the memory of Sasha Anan'in.