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Limiting distributions for a particle in a tube

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Abstract

We study the behavior of a billiard particle in a tubular domain, which has a peculiar property: it reverses the direction of the most of incoming particles. We relate this property to the existence of certain limiting distributions, which are studied with the help of the geodesic flow on $ASL(2, \mathbb{R})$.

This is a joint work with with K. Khanin, J. Marklof, A. Plahov.