

Title: Invariant measures and statistical limit laws in chaotic billiards

Abstract:

Chaotic billiards, originating with Lorentz in 1905, became very popular models in chaos theory, shedding light on various real-life phenomena. Despite conceptual simplicity, they are infamously difficult mathematically, which is attributed in part to the interplay of discontinuities and unbounded derivatives.

I plan to talk about different invariant probability measures governing chaotic billiards and the related probabilistic laws. This is a rich area, drawing from classical works by Y. Sinai, L. Bunimovich, N. Chernov, with most recent advancements by V. Baladi, J. Carrand, M. Demers, and myself, among many others.