

On the measure of maximal entropy of Sinai billiards

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Sinai billiards maps and flows are uniformly hyperbolic - however grazing orbits give rise to singularities. Most existing works on the ergodic properties of billiards are about the SRB measure (i.e. the Liouville measure in the case of flows), for which exponential mixing is known (both in discrete and continuous time). Another natural equilibrium state is the measure of maximal entropy. Since the discrete-time billiard is discontinuous, the mere existence of this measure is not granted a priori. With Mark Demers, we have recently constructed a measure of maximal entropy and shown that it is Bernoulli and has full support. I will also discuss conditions ensuring that the measure of maximal entropy differs from the SRB measure. This is joint work with Mark Demers.