Thermodynamics of some non-uniformly hyperbolic attractors

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Abstract

The purpose of my talk is to describe thermodynamical formalism for a certain family of non-uniformly hyperbolic attractors. I am concerned with maps which can be obtained from uniformly hyperbolic examples by so called *slow down procedure*. Namely, starting with a hyperbolic local diffeomorphism $f : U \to M$ with an attractor Λ, one slows down trajectories in a small neighborhood of a hyperbolic fixed point $p \in \Lambda$ obtaining a nonuniformly hyperbolic diffeomorphism $g : U \to M$ with a topological attractor Λ_g. I establish the existence of equilibrium measures for any continuous potential function on Λ_g, however my main focus is the family of *geometric t-potentials* defined by $\varphi_t(x) := -t \log |dg_{|E^u(x)}|$. I will state the results regarding the existence, uniqueness and statistical properties of equilibrium measures for the geometric t-potential on a certain interval in t.