

Thermodynamic formalism for non-uniformly hyperbolic dynamical systems

Katrin Gelfert

Abstract

We consider a compact locally maximal invariant set K of a C^2 -diffeomorphism $f:M\rightarrow M$ on a smooth Riemannian manifold M . We discuss the topological pressure (with respect to $f|_K$) for a wide class of Hölder continuous potentials and relate it to dynamical, as well as geometrical, properties of the system. Under a mild nonuniform hyperbolicity assumption we show that the pressure of a potential is entirely determined by its values on the periodic orbits with sufficiently strong hyperbolic behavior.