

EXTREMES FOR ENERGY-LIKE OBSERVABLES ON HYPERBOLIC SYSTEMS

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We consider an ergodic, measure-preserving dynamical system (T, X, μ) equipped with an observable $\phi : X \rightarrow \mathbb{R}$. Given the stochastic process $X_n(x) = \phi(T^n(x))$, we establish an extreme value law for the sequence of maxima $M_n = \max_{k \leq n} X_k$ where ϕ is an energy-like observable and (T, X, μ) is hyperbolic. Observables of this form have the property that the set of maximization is a curve rather than a single point. We will discuss results in the case of Anosov diffeomorphisms, Sinai dispersing billiards, and coupled expanding maps.