

Asymptotic behavior of the pressure function for Holder potentials

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We study the behavior of the pressure function for Holder continuous potentials on mixing subshifts of finite type. The classical theory of thermodynamic formalism shows that such pressure functions are convex, analytic and have slant asymptotes. We provide a sharp exponential lower bound on how fast the pressure function approaches its asymptotes. As a counterpart, we also show that there is no corresponding upper bound by exhibiting systems for which the convergence is arbitrarily slow. However, we prove that the exponential upper bound still holds for a generic Holder potential. In addition, we determine that the pressure function satisfies a coarse uniform strict convexity property.

(joint work with Anthony Quas)