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*Thermodynamic properties of the Jacobi Perron algorithm*

The Jacobi-Perron algorithm provides simultaneous rational approximations to vectors in  $(0, 1)^N$ . The quality of the approximation can be estimated by means of the Lyapunov exponents associated to some product of matrices related to the algorithm. In this talk I will describe some dynamical properties of the level sets determined by the speed of convergence of simultaneous rational approximations to irrational vectors. I will explain how a non-additive thermodynamic formalism on non-compact spaces developed jointly with Yuki Yayama will serve that purpose. Part of this work is joint with Jairo Bochi and Pablo Shmerkin.