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LIPSCHITZ CONTINUITY IN TOPOLOGICAL DYNAMICS ON THE INTERVAL

How can we interpret the infimum of Lipschitz constants in a conjugacy class of interval maps? For positive entropy maps, the exponential of the topological entropy gives a well-known lower bound. We show that for piecewise monotone maps, these two quantities are equal, but for countably piecewise monotone maps, the inequality can be strict. Moreover, in the transitive and Markov case, we characterize the infimum of Lipschitz constants as the exponential of the Salama entropy of a certain reverse Markov chain associated with the map. Dynamically, this number represents the exponential growth rate of the number of iterated preimages of nearly any point.

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