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Shrinking Targets for Countable Markov Maps

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Let \$T\$ be an expanding Markov map with a countable number of inverse branches and a repeller Δ contained within the unit interval. Given $\alpha \in \mathbb{R}^+$ we consider the set of points $x \in \mathbb{R}^+$. Consider the set of points $x \in \mathbb{R}^+$ (alpha $i \in \mathbb{R}^+$) we consider the set of points $x \in \mathbb{R}^+$ (alpha) for infinitely many iterates n. Let $s(\alpha)$ denote the infimal value of s for which the pressure of the potential $-s \log|T'|$ is below $s \alpha \in \mathbb{R}^+$. Building on previous work of Hill, Velani and Urba' (n) we show that for all points y contained within the limit set of the associated iterated function system the Hausdorff dimension of the shrinking target set is given by $s(\alpha)$. Moreover, when $\delta = [0,1]$ the same holds true for all $y \in [0,1]$. However, given $\delta = 0,1$ we provide an example of an expanding Markov map T with a repeller $\Delta = 0,1$ we provide an example of an expanding Markov map T with a repeller $\delta = 0,1$ we provide an example of an expanding Markov map T with a repeller $\delta = 0,1$ we provide an example of an expanding Markov map T with a repeller $\delta = 0,1$ we provide an example of an expanding Markov map T with a repeller $\delta = 0,1$ we prove the measure of $\delta = 0,1$ we provide an example of an expanding Markov map T with a repeller $\delta = 0,1$ we prove the measure of $\delta = 0,1$ we conside the measure of $\delta = 0,1$ we conside the measure of $\delta = 0,1$ we conside the measure of $\delta = 0,1$ we prove the measure of $\delta = 0,1$ we conside the measure of δ

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