

ENTROPY FOR GENERALISED BETA-TRANSFORMATIONS

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Generalised beta-transformations are the class of piecewise continuous interval maps given by taking the beta-transformation $x \mapsto \beta x \pmod{1}$, where $\beta > 1$, and replacing some of the branches with branches of constant negative slope. We would like to describe the set of beta for which these maps can admit a Markov partition. We know that beta (which is the exponential of the entropy of the map) must be an algebraic number. Our main result is that the Galois conjugates of such beta have modulus less than 2. This extends an analysis of Solomyak for the case of beta-transformations, who obtained a sharp bound of the golden mean in that setting.

I will also describe a connection with some of the results of Thurston's final paper, where the Galois conjugates of entropies of post-critically finite unimodal maps are shown to describe a fascinating, and still somewhat mysterious, fractal set.