Title: Densely branching trees as models for Hénon-like and Lozi-like attractors

Abstract: We show that Hénon-like and Lozi-like maps on their strange attractors are conjugate to shift homeomorphisms on inverse limits (also called natural extensions) of maps on metric trees with dense set of branch points. For Hénon maps this applies to Benedicks-Carleson positive Lebesgue measure parameter set, and sheds more light onto the result of Barge from 1987, who showed that there exist parameter values for which Hénon maps on their attractors are not natural extensions of any maps on branched 1-manifolds. For Lozi maps the result applies to an open set of parameters given by Misiurewicz in 1980. In general, under mild dissipation, introduced by Crovisier and Pujals in 2017, conjugacy holds if the attractor does not have an arc in common with a stable manifold, and the density of branch points holds when the attractor is a homoclinic class. Our result can be seen as a generalization of a classical result of Williams from 1967 to the non-uniformly hyperbolic world. To the best of our knowledge, these are the first examples of canonical two-parameter families of attractors in the plane for which such a 1-dimensional locally connected model is given, tying together topology and dynamics of these attractors.

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