Prevalence of non-uniform hyperbolicity at the first bifurcation of Hénon-like families

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Abstract:

We consider strongly dissipative Hénon-like maps in the plane, around the first bifurcation parameter a* at which the uniform hyperbolicity is destroyed by the formation of homoclinic or heteroclinic tangencies inside the limit set. In [Takahasi H.: Commun. Math. Phys. **312** 37-85 (2012)], it was proved that a* is a full Lebesgue density point of the set of parameters for which the non-wandering set of the corresponding map is transitive, and Lebesgue almost every initial point diverges to infinity under forward iteration. For these parameters, we show that all Lyapunov exponents of all invariant ergodic Borel probability measures are uniformly bounded away from zero, uniformly over all the parameters.