

High dimension diffeomorphisms exhibiting infinitely many strange attractors

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abstract

In this work we show that arbitrarily near any smooth diffeomorphism, on a manifold of arbitrary dimension, with a homoclinic tangency associated to sectionally dissipative fixed (or periodic) point (i.e. the product of any pair of eigenvalues has norm less than 1), there exists a diffeomorphism exhibiting infinitely many (nonhyperbolic) Hénon-like strange attractors. In the two-dimensional case this had been proved by E. Colli, Infinitely many coexisting strange attractors. Ann. Inst. H. Poincaré Anal. Non Linéaire, 15: 539-579, 1998. We also show a one-parameter version of this result.