

ISOLATING DYNAMICS IN MANIFOLDS

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ABSTRACT. A compact invariant set for a homeomorphism is called isolated if it is the maximal invariant set of some neighborhood of itself, and strongly isolated if it also contains the non-wandering points in the isolating neighborhood.

A system—i.e., a homeomorphism of a compact metric space—can be (strongly) isolated in dimension n if it is topologically conjugate to the restriction of a homeomorphism of an n -dimensional compact manifold to a (strongly) isolated set.

We show that the restrictions of homeomorphisms in dimension n to compact invariant sets can be strongly isolated in dimension $n + 1$. Consequently, every Cantor system can be strongly isolated in dimension 3 and higher. We demonstrate some classes of Cantor systems which can be strongly isolated in dimension 2, but also that there are Cantor systems which cannot be isolated in dimension 2.

This is joint work with Mike Boyle.