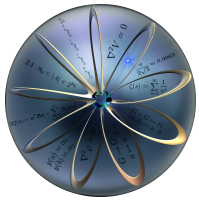

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homoclinic class

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Let M be a compact smooth manifold and $f\colon M \to M$ a diffeomorphism. The *homoclinic class* of a hyperbolic periodic point p of f, denoted $H(p, f)$, is the closure of the set of transverse intersections between the stable and unstable manifolds all points in the orbit of p; i.e.

$$H(p, f) = \mathrm{cl}\left(\bigcup_{n\in\mathbb{N}} W^s(p) \pitchfork \bigcup_{n\in\mathbb{Z}} W^u(p)\right).$$

Homoclinic classes are topologically transitive, and the number of homoclinic classes is at most countable. Moreover, generically (in the $\mathcal{C}^1$ topology of $\mathrm{Diff}(M)$), they are pairwise disjoint and maximally transitive.