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An "orbit closing lemma". (Un lemme de fermeture d'orbites: Le "orbit closing lemma".)

(French) Zbl 0867.58040
C. R. Acad. Sci., Paris, Sér. I 323, No. 11, 1175-1178 (1996).

Summary: Let f be a diffeomorphism (resp. symplectic diffeomorphism, resp. volume preserving diffeomorphism) of a Riemannian manifold (M,d). Let $\Sigma(f)$ be the set of points $x\in M$ such that for every neighbourhood U of f in the C^1 topology and every $\varepsilon>0$, there exist $g\in U$ and $y\in M$ such that:

(i) y is a periodic point of g with period m;

(ii) $g=f$ in $M\setminus\bigcup_{0\le k\le m}B_\varepsilon(f^kx)$;

(iii) $\forall i\in[0,m]$, $d(g^iy,f^ix)<\varepsilon$.

Then $\Sigma(f)$ is a countable intersection of open subsets of the set $R(f)$ of recurrent points of f and is dense in $R(f)$.

MSC:

37B99 Topological dynamics

Cited in **1** Document

Keywords:

orbit closing lemma

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