

Ovsyannikov, I. M.; Shil'nikov, L. P.

On systems with a saddle-focus homoclinic curve. (English. Russian original) [Zbl 0628.58044](#)
Math. USSR, Sb. 58, 557-574 (1987); translation from *Mat. Sb., Nov. Ser.* 130(172), No. 4(8), 552-570 (1986).

The paper is devoted to C^r -smooth ($r \geq 3$) dynamical systems (vector fields) on C^r -manifolds of dimension ≥ 3 with an isolated equilibrium point O . This point O is required to be a saddlefocus and have a homoclinic curve (some additional technical conditions are also required to hold). Such systems constitute a codimension 1 submanifold \mathcal{B}^1 of the space of all systems. It is proved that in \mathcal{B}^1 there is a dense subset of systems with a nonstable periodic orbit and a nonstable homoclinic Poincaré curve. Also, the systems with a countable set of stable periodic orbits are dense in an open subset of \mathcal{B}^1 . And the systems with a countable set of completely unstable periodic orbits are dense in another open subset of \mathcal{B}^1 .

Reviewer: N.Ivanov

MSC:

[37G99](#) Local and nonlocal bifurcation theory for dynamical systems

Cited in **1** Review
Cited in **43** Documents

Keywords:

saddlefocus; homoclinic curve; nonstable periodic orbit

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