

HOMOCLINIC CLASSES OF C^1 -GERNERIC DIFFEOMORPHISMS

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RESUMO. The study of the dynamics of chain recurrence classes and their interaction with other chain recurrence classes has become a major problem in C^1 -generic dynamics. In particular, this has raised interest in the study of homoclinic classes, which are generically the chain recurrence classes containing periodic orbits. At the moment, very little is known when the class is *wild*, that is, accumulated by infinitely many distinct chain recurrence classes (isolated classes are now quite well understood). In particular, very natural and simple questions remain wide open, such as:

- (1) if one of these homoclinic classes may have a nonempty interior and not be the whole manifold;
- (2) if one of these homoclinic classes may have the shadowing property;

We will discuss some partial results about these open problems. In particular, we will show that if a C^1 -Generic diffeomorphism has a homoclinic class with nonempty interior has the shadowing property, then it is an Anosov diffeomorphism.

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