



Seminário de Sistemas Dinâmicos da UFF

HÖLDER STABILITY BY TRANSLATIONS

Javier Correa
UFF

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Resumo

The Palis-Smale conjecture states that the diffeomorphisms of a manifold which are stable are the hyperbolic ones. One way to address this question is to ask for some regularity in the variation of the conjugacy according to the perturbation. If the regularity is Lipschitz Franks, Guckenheimer (C^1 topology) and Mañé (C^r topology) proved that this implies hyperbolicity of the system. In this work we study when the variation is Holder instead of Lipschitz. Our setting will be a diffeomorphism $f : M \rightarrow M$ an invariant set L and a one-dimensional bundle E over L that is orientable. The orientability allows us to define naturally a family of one-parameter perturbations which we call E -translations.

We prove that if the diffeomorphism is C^2 , df preserves the orientation over E , and there exist an E -translation f_s such L is stable for that curve and the conjugacy is at distance α -Holder with $\alpha > 1/2$ then L is hyperbolic in the E -direction. This theorem is also sharp as we will see with an example.