

Hofer's geometry and braid stability

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A central object in the study of Hamiltonian diffeomorphisms on a symplectic manifold is Hofer's metric d_H , a bi-invariant metric on the group of Hamiltonian diffeomorphisms that displays rigidity features that are special for those diffeomorphisms.

In my talk I will discuss a result stating that, under certain conditions, the braid type of a set of periodic orbits of Hamiltonian diffeomorphisms is stable under perturbations that are sufficiently small with respect to Hofer's metric. This can be applied to obtain stability properties of topological entropy. For example, one obtains that for any C^∞ -generic Hamiltonian diffeomorphism of positive topological entropy on the two-dimensional disk there is a d_H -open neighborhood of Hamiltonian diffeomorphisms for which the topological entropy is positive. This talk is based on joint work with Marcelo Alves.