

Abstract: I will talk about the following theorem: If f is a C^1 generic symplectic diffeomorphism of a compact manifold then the Oseledec splitting along almost every orbit is partially hyperbolic or trivial; in addition, if f is not Anosov then all Lyapunov exponents in the center bundle are zero. This result was announced by Mane in the ICM1983, and proved by myself in 2008. The proof is more difficult than the corresponding result for volume-preserving case (obtained by Viana and myself around 2002); in the symplectic case I use a random-walk method for the construction of perturbations. If time allows, I will speak about the following result, obtained by Avila, Wilkinson and myself (2009): C^1 -generic partially hyperbolic diffeomorphisms are ergodic. An ingredient of the proof of this result is nonuniform center bunching, which comes from the previous theorem.