

Huyi Hu, "*The essential coexistence phenomenon in Hamiltonian dynamics*"

We construct an example of a Hamiltonian flow f^t on a 4-dimensional smooth manifold M which after being restricted to an energy surface M_e demonstrates essential coexistence of regular and chaotic dynamics, that is, there is an open and dense f^t -invariant subset U of M_e such that restricted to U f^t has non-zero Lyapunov exponents in all directions, except the direction of the flow, and is a Bernoulli flow while on the boundary of U , which has positive volume, all Lyapunov exponents of the system are zero. This is a joint work with Jianyu Chen, Yakov Pesin and Ke Zhang