

abstract

Analysis Seminar
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

We present some novel approaches to the instability problem of Hamiltonian systems (in particular, the Arnold Diffusion problem). We show that, under generic conditions, perturbations of geodesic flows by recurrent dynamics yield trajectories whose energy grows to infinity in time (at a linear rate, which is optimal). We also show that small, generic perturbations of integrable Hamiltonian systems yield trajectories that travel large distances in the phase space. The systems that we consider are very general. The methodology relies on the theory of normal hyperbolicity and on the recurrent properties of the dynamics. The moral is: a little recurrence goes a long way.