

Chaotic transport in Hamiltonian classical and quantum systems

Ratchets, anomalous transport, Levy flights, fractals, dynamical traps, cantori and transport barriers in Hamiltonian classical and quantum systems. Searching for and visualization of invariant manifolds, stickiness and unstable periodic orbits, computing Lyapunov exponents.

Generation and control of directed transport of classical and quantum particles in spatially periodic potentials with the help of weak perturbations with adiabatically modulated parameters. Autoresonant cooling of particles.

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