

Hamiltonian systems: proposed projects

March 16, 2017

- The Hill problem under a magnetic field
- The dynamics of convex billiards
- Twist maps and Aubry-Mather Theory
- The proof of Kolmogorov Theorem
- The Nekhoroshev theorem
- The convergence of the Birkhoff normal form
- The separatrix map for area preserving maps
- Mean motion resonances in the restricted three body problem
- Oscillatory motions and the Sitnikov problem
- Dynamics close to collision in the three body problem
- Invariant manifolds of Lyapunov orbits near L_2 in the planar circular restricted three body problem
- Small generalized breathers with exponentially small tails for Klein-Gordon equations.
- Stability versus transfer of energy in Hamiltonian Partial Differential Equations
- Dynamics and chaos in the elliptic isosceles restricted three-body problem with collision