

Hamiltonian systems: proposed projects

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- 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
- Oscillatory motions and the Sitnikov problem
- Dynamics close to collision in the three body problem
- Triple collision in the three body problem
- Central configurations
- Choreographies in the N -body problem
- Center manifolds of the Libration points
- Normal forms around the libration points
- Chaos in the restricted three body problem
- Invariant manifolds of Lyapunov orbits near L_2 in the planar circular restricted three body problem
- Transfer of energy in Hamiltonian Partial Differential Equations
- Normal forms in Hamiltonian Partial Differential Equations.
- Nekhoroshev theorem in Hamiltonian Partial Differential Equations.