

## Three models for Arnold diffusion in the three body problem

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We present three models for the Arnold diffusion phenomenon in the three body problem. The first two models concern the spatial circular and the planar elliptic restricted three body problem. The third model is an abstract three-degree of freedom Hamiltonian system whose geometry is similar to that of the spatial circular restricted three-body problem. In all of these examples there exist a normally hyperbolic invariant manifold that can be parametrized by action-angle coordinates, and we show the existence of trajectories whose action coordinates experiences some substantial change. We use analytical arguments combined with numerical experiments.

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