

## **Secular Evolution of Motions in the Planetary Version of the Non-Restricted Three-Body Problem**

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We consider a system of three celestial bodies consisting of a “star” and two “planets” orbiting around it. The masses of the planets are significantly less than the mass of the star. The evolution of the planets’ orbital motion is studied within the framework of a double averaged non-restricted three-body problem. The main attention is paid to coplanar configurations, when the star and planets move in a certain plane that preserves a constant position. Various variants of secular evolution are described in detail. In particular, the possibility of reversing the orbital motion of the inner planet is noted. Also we analyzed apsidal resonances representing stationary solutions of the averaged motion equations in which the positions of the lines of the apsides of the planets’ orbits coincide. Bifurcation diagrams are constructed that characterize the dependence of the number of stationary solutions and their stability properties on the values of the problem parameters. The realization of apsidal resonances in real exoplanetary systems is discussed.