

## **Determination of Libration Characteristics of Asteroids near Mean Motion Commensurabilities 1/1, 4/3, 3/2, 2/1, 7/3, 5/2, and 3/1**

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### **Abstract**

The possibility of using a generalized perfect resonance for the study of libration motions of asteroids near the  $(p + q)/p$ -type commensurabilities of the mean motions of asteroids and Jupiter is considered. Based on the equations of the planar circular restricted three-body problem, the libration-motion equations are derived and their solutions for the intermediate Hamiltonian, as well as a solution taking into account perturbations of the order  $O(m^{3/2})$ , are determined.

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