

Eccentricity and migration for exosolar hot Jupiters: A simple model

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Recent observations of exosolar systems have surprisingly shown the existence of Jupiter-like exoplanets in orbits too close to their host star, having also unexpectedly large eccentricities. One possibility to explain this is planetary migration.

In this contribution, using a simple model for planet accretion which includes a number of mean-motion resonances, we address the question of migration of an early formed hot Jupiter within a disk of planetesimals. We show that mean-motion resonances allow for inward or outward migration, depending on the initial location of the planet. We analyze the size of the gap formed in the disk, and also consider statistical measures of the formed planetary systems.