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Influence of tidal perturbation from parent stars on evolution of exoplanets

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Known that a structure of planetary systems depends from effects of their own rotation. Tidal perturbations play important role in dynamical evolution of planets. According to the list of extra-solar planets, more them half of exoplanets has semi-major axis of orbit less 1 AU. We consider rotary evolution of exoplanets under action of tidal and gravitational perturbations. During investigation, we found evolution trajectories of kinetic momentum vector for some exoplanets: OGLE-TR-56 (a=0.02AU, P = 1.2d), OGLE-TR-113b (a=0.02AU, P=1.4), WASP-1 (a=0.04AU, P=2.5d), HD 177830 (a=1AU, P=391d), HD 4208 (a=1.67AU, P=812.d) and others. In the report we present analytical and numerical modeling of rotational evolution of exoplanets, describe perhaps regimes of axis evolution of the planets and discuss a problem of connection of axis rotation of planets and its orbital rotation.