

Detection and Dynamics of Exoplanets (DDE): Interplay between theory and observations



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Equilibria in resonant chains

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Planetary systems in resonant chains are of particular interest both from a dynamical point of view and an observational point of view. In particular the three planet resonant angles are a valuable observable for transiting systems. Indeed, transit timing observations allow to measure the libration of these angles while in most cases the two planet angles cannot be observed. The final equilibrium of three planet angles (around which the system is observed to librate) depends on the formation and evolution of the system. Models of resonant chains can also be used (and have been used) to predict the periods and phases of additional planets in systems known to already harbor resonant planets. In this talk, I will present an analytical model of resonant chains and its application to several observed systems.

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