Asteroseismology of stars harboring planets: impact on the exoplanet characterization

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Abstract

The Kepler and CoRoT missions have detected thousands of exoplanet candidates orbiting various types of stars. Validation as well as characterization of these planet candidates depend critically on our knowledge of the host star properties, which are often poorly constrained. Asteroseismology has been extremely successful in providing accurate masses and radii of the host stars, helping in better determining occurrence rates and sizes of planets. In this talk, I review the latest results on derivation of stellar properties, in particular ages, for asteroseismic targets. Having these parameters for an ensemble of planetary host stars will allow to comment on theory of planet formation. I discuss the results in the context of characteristics of main-sequence exoplanets host-stars, as well as temporal constraints of processes such as evolution of eccentricity, orbital synchronization and circularization, efficiency of resonances, and obliquities.

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