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Title: Asteroseismic determination of the obliquities of candidate Kepler exoplanet-host stars
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Abstract: Measuring the obliquity of exoplanet-host stars provides invaluable diagnostic information for theories of planetary formation. Most of these results have so far been obtained by detecting the Rossiter-McLaughlin effect or else by detecting transits of a planet over starspots, clearly favouring systems harbouring hot Jupiters. While it would be extremely helpful to extend these measurements to long-period and multiple-planet systems, it is also true that the latter systems tend to involve smaller planets and intrinsically fainter stars, making it ever so difficult to apply such techniques. Asteroseismology, however, provides a powerful method of determining the inclination of the stellar rotation axis — from an analysis of the rotationally-induced splittings of the oscillations modes — whose applicability is ultimately determined by the stellar parameters and not by the signal-to-noise ratio of the transit data. Here we present and discuss the application of asteroseismology to the problem of stellar obliquity determination for a set of 30 prioritized solar-type Kepler Objects of Interest, 15 of which harbour multiple-planet systems.