
Testing Asteroseismic Scaling Relations with Interferometry

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Abstract

The asteroseismic scaling relations for the frequency of maximum power, ν_{\max} , and the large frequency separation, Δ , provide an easy way to directly determine the masses and radii of stars with detected solar-like oscillations. With the vast amount of data available from the CoRoT and Kepler missions, the convenience of the scaling relations has resulted in their wide-spread use. But how valid are the scaling relations when applied to stars substantially different from the Sun, such as F stars and red giants? Verifying the scaling relations empirically requires independent measurements of radius and mass. We report on the latest results of our campaign to directly measure the radii of asteroseismic targets with interferometry. The K2 Mission has provided us with new targets, in particular brighter giants with better parallaxes than had previously been observed with CoRoT or Kepler. We use our interferometric diameters, with additional constraints, to test the scaling relations.

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