

# Confronting stellar structure theory with asteroseismic data

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## **Abstract**

The theory of stellar structure and evolution is one of the better established theories in astrophysics. The simplicity of the theory, and its ability to explain the observations of star clusters as well as field stars ensured its success. Till very recently the only observations the theory of stellar structure was confronted with dealt with the properties of the stellar surface such as surface temperature, metallicity and luminosity. We now have observations of stellar pulsations from missions like Kepler. The pulsations probe the interior of stars. These allow us to determine properties of stars in a manner not possible earlier. These observations could also allow us to reduce some of the uncertainties inherent in the theory. The study of solar pulsations has already helped us put constraints on some of the inputs to the theory, and we should soon be able to put constraints on stellar models as well. In this talk I shall review how we use these data to constrain stellar models and some new results that we have obtained.