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The entropy of stellar oscilations.

J.C. Suárez[1,4], A. Moya[2,1], L.M. Sarro[3], A. García Hernández[1] and M. A. Mendoza[1]

[1] University of Granada (UGR). Dept. Theoretical Physics and Cosmology. 18071. Granada. Spain
[2] School of Physics and Astronomy. University of Birmingham.Edgbaston, Birmingham B15 2TT. England, UK.
[3] Dpto. de Inteligencia Artificial, UNED, c/ Juan del Rosal, 16, Madrid E-28040, Spain
[4] Instituto de Astrofísica de Andalucía (IAA-CSIC). Glorieta de Astronomía s\n, 18008, Grana

Abstract

This work presents a simple yet powerful method based on Shannon's entropy to detect frequency patterns in the stellar oscillation spectra. In particular we seek for the so-called "large separation", which is proportional to the stellar mean density. This method relies only on the observed power spectra. We show here how large separation of the Sun, solar-like stars and even A-F, main-sequence stars are accurately detected with this method. Likewise, an estimate of the mean densities for A-F stars is provided. Due to its simplicity, this method can easily be implemented in automated pipelines, like those providing precise values of the mass, radius, and age of stars hosting planets in space missions like TESS or PLATO.(See poster).