N16a Asteroseismology of Solar-like pulsators: determination of the stellar spin axis angle for HAT-P-7 and Kepler-25 and implications for their exoplanets

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The launch of the CoRoT and Kepler space instruments has begun a new era for asteroseismology, the science that studies stellar pulsations. Evidences of pulsations in tens of thousands stars and, for a wide variety of mass and of evolutionary stage have been uncovered. These pulsations not only unveil with unprecedented precision the fundamental characteristics of the stars (Mass, age, radius, ...) but also help us to better characterise exoplanets.

The study of Solar-like stars is of great interest because this can help us to understand the place of the Sun among other stars and may give us a better understanding of the required conditions to sustain life. This presentation will focus on the asteroseismology of two solar-like pulsators, host-stars of confirmed exoplanets: HAT-P-7 and Kepler-25. I will present our stellar modelling results using Kepler data, and how the asteroseismology indicates that the angle between the stellar spin and the planets orbit plan (also referred as obliquity) is misaligned in both cases. An analysis of the transit lightcurve and radial velocity will be presented separately by K. Masuda.