

# The scientific projects of the Interferometric Survey for Stellar Parameters with SPICA/CHARA

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## Abstract

Up to now,  $\sim 200$  stars have a measured angular diameter precise at the 1% level. The measurements were made with different instruments, using different techniques and different spectral bands, which provide scattered and inaccurate results. The angular diameter is however important because it allows the determination of many other stellar parameters, like the stellar radius (if combined with the distance to the star), the effective temperature (when combined to the bolometric flux), the radius of a planet if it transits its star, and the distance in the case of Cepheid stars.

The Interferometric Survey for Stellar Parameters (ISSP) is dedicated to the measurements of a thousand stars with homogeneous data and analysis, which will provide the largest catalog of stellar diameters with 1% precision. The three main objectives are 1) the determination of exoplanet host stars radii, thus of the exoplanetary parameters, 2) the determination of the parameters of asteroseismic targets, to refine scaling laws, and 3) the calibration of surface brightness color relations (SBCR). Five additional programs focus on stellar activity, including rotation, binarity, limb-darkening, etc., with the double objective to study these phenomena and control the systematics.

The survey takes advantage of the new CHARA/SPICA instruments that uses the 6 telescopes of the array in the optical band. We will present the scientific objectives of the survey, the status of the instrument after a few months of commissioning and the first results of the observing campaigns.