
Habitable Worlds with kilometer baseline interferometry

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Abstract

Habitability is a central stake of planet formation and exoplanet studies. In the long term, it ultimately requires direct observations of exoplanets with high-contrast and resolving the initial conditions of protoplanets in the inner astronomical units. Here, we focus on how a large, kilometer interferometric array would allow to explore a new parameter space to put the concept of Habitability in context, from studying the precursors of super-Earth and mini-Neptune planets in protoplanetary disks, complementing our demographics of exoplanets with micro-arcsecond astrometry, and ultimately characterizing planetary surface and biomarkers. We will briefly recall what is the current parameter space of O/IR Interferometer 40 years after the seminal ESO Interferometry Working Group (Beckers 1990), and how these cases translate in top-level requirements and open questions for the development of a next generation interferometer.

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