
The role of the next generation of infrared interferometers in the study of young stellar objects in the mid-infrared

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Abstract

The VLTI combined with MATISSE provides the highest angular resolutions possible today at mid-infrared wavelengths. While a powerful facility for studying the inner regions of accretion and planet-forming disks around young stars, even the milliarcsecond resolution provided by the VLTI is often insufficient to resolve emission from material within the dust sublimation radius. At the same time, even though it is possible to obtain adequate uv coverage for image reconstruction by changing the configuration of the movable Auxiliary Telescopes of the VLTI, the short-term (weeks) variability seen in many objects means that the emission structure can change too quickly to reliably reconstruct images for variable sources with existing facilities. In this talk, I will present the current status and limitations of studies of Young Stellar Objects (YSOs) at mid-infrared wavelengths with VLTI/MATISSE within the framework of the Guaranteed Time Observations program of the MATISSE consortium, and discuss the prospects and required characteristics from the next generation of long-baseline infrared interferometers in the coming decades.

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