
Fibers for long baseline interferometry: from Meudon to the Galactic Center

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Abstract

The performance of optical interferometers has become remarkable in the past two decades thanks to the advent of a few key techniques among which modal filtering with single-mode fibers has turned out to be indispensable to reach very high quality results. The Meudon group, in collaboration with NOAO (now NOIRlabs), has initiated and led research on fiber interferometry in the near- to the mid-infrared, taking advantage of the innovation of fluoride glass single-mode fibers. It first led to the demonstration of high-quality visibilities despite the effects of atmospheric turbulence with the FLUOR instrument, to the potential of fibers to transport light in long-baseline interferometers with the 'OHANA demonstrator and to the highly sensitive and accurate GRAVITY instrument whose results on the Galactic Center are well known. Other teams also investigated fiber interferometry at different wavelengths and integrated optics. We will describe this adventure in the talk and recall fundamental problems this/these techniques allowed to solve.

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