

Abstract SF2A 2024 - Atelier S05

Title: Kilometer-baseline interferometer: technology paths and sensitivity requirements

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Abstract: The extension of optical/IR interferometers to kilometer baselines and a larger number of telescopes implies major breakthroughs in the technologies required for beam-transport, delay compensation and recombination scheme. These technologies evolved dramatically with the growing importance of ground-space communication, lidar, frequency-time distribution or quantum technologies, in addition to the components inherited from telecom industry. Here, we propose a review of the technology available in the field and define its requirements in terms of sensitivity, focusing on the case of a kilometer-baseline interferometer on 8m-class telescopes, as a potential extension of the existing VLTI array.