Follow up of microlensing events with interferometry: future prospects

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Abstract

Microlensing provides a unique window in astrophysics, especially in the field of exoplanets and single dark ojects (neutron stars, black holes). Measuring directly the Einstein radius of microlensing events provide the mass of the lens, which is currently the only way to detect and characterise single stellar mass black holes (SSMBH). Although gravitational waves detect stellar mass black holes, they must be in close binaries (BSMBH). SSMBH are thought to me mostly formed in core collapse supernova, whereas BSMBH results from dynamical interaction of extremly massive binaires and/or BH with binaries. Nothing is observationaly known on the mass distribution on SSMBH, whereas there must be millions of such objects roam our galaxy. We present the latest result on observations of microlensing with GRAVITY at the VLTI (including in the GRAVITY Wide mode) and propose a roadmap for present and future facilities, with an emphasize on the requirements for high efficiency observations to enable survey of hundreds of targets per year.

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