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Constraining the abundance of primordial gravitational waves with microlensing of gravitational waves

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Microlensing of gravitational waves by can result in interference patterns in the observed strain. The spècific form of these interference patterns depend on the mass of the microlens and the abundance of microlenses. We demonstrate how microleneses with masses of a few tens of solar masses (similar to the masses of the black holes observed by LIGO-Virgo) can produce observable effects in the frequency range of LIGO-Virgo. A detailed analysis of these distortions can reveal the abundance of black holes in this mass regime.

Primary author: Dr DIEGO, Jose M (IFCA)

Presenter: Dr DIEGO, Jose M (IFCA)

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