

Contribution ID: 219

Type: PhD forum talk + poster

## Abundance of LIGO/Virgo Black Holes from Quasar Microlensing

Friday 4 June 2021 15:48 (6 minutes)

Could Dark Matter (DM) be made of Primordial Massive Black Holes (PMBHs) with such mass as detected by LIGO? The amplitude and frequency of gravitational microlensing can be used to detect PBHs. However, they can be mixed with the normal stellar population that can also contribute to microlensing. To separate the contributions from both populations, we perform numerical simulations to study the possible degeneracy of a bimodal distribution of masses with a single-mass function plus a smooth component. This degeneracy is supported by analytical calculations in the low mass surface density case but needs to be studied with numerical simulations in the general case. From this analysis and the experimental microlensing results by Mediavilla et al. (2017), we discuss the possible existence of a PBHs population mixed with the stellar component.

## arXiv number (if applicable)

2011.05751

Authors: ESTEBAN GUTIÉRREZ, Ana; Prof. MEDIAVILLA GRADOLPH, Evencio (IAC); Prof. JIMÉNEZ VICENTE, Jorge (UGR)

Presenters: ESTEBAN GUTIÉRREZ, Ana; ESTEBAN GUTIÉRREZ, Ana

Session Classification: PhD Forum