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Constraining The Fraction of Compact Dark Matter Using Gravitational Lensing of Gravitational Waves

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Massive halo compact astrophysical objects (MACHOs) are a potential candidate of dark matter, the presence of which in the interstellar medium can cause deflection of gravitational waves (GWs), a phenomenon called gravitational lensing. If we do not find any lensing signature in the LIGO-Virgo data of gravitational waves, we can put an upper cut-off on their abundance in the mass range of $10-10^5$ solar mass. In our work, we show how Bayesian analysis can help us determine the lensing signature of GWs and the absence of which will help constrain the upper limit of the MACHOs

Primary authors: BASAK, SOUMMYADIP (ICTS-TIFR, Bangalore, India); Dr GANGULY, APRATIM; Dr M K, HARIS; Dr KAPADIA, SHASVATH; Dr MEHTA, AJIT; Prof. PARAMESWARAN, AJITH

Presenter: BASAK, SOUMMYADIP (ICTS-TIFR, Bangalore, India)

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