



Contribution ID: 122

Type: Regular plenary talk

Prospects of testing dark matter with gravitational lensing and gravitational waves.

Friday, 21 February 2025 12:00 (15 minutes)

Gravitational lensing and gravitational waves - new opportunities to test dark matter

Abstract.

We entered the era when the opening of gravitational wave (GW) window on the universe combined with ongoing (ZTF) and forthcoming (LSST) big real time surveys creates a breakthrough in multi-messenger astrophysics. Most of the astrophysical messengers travel along null geodesics and may undergo strong gravitational lensing (SGL). SGL theory has now become a mature field with manifold applications already explored. In my talk I will discuss how such multi-messenger/multi-wavelength data, especially regarding SGL systems, could be used to constrain certain properties of dark matter like its viscosity or the nature of dark matter, e.g. fuzzy dark matter halos.

Primary author: BIESIADA, Marek (Narodowe Centrum Badań Jądrowych)

Presenter: BIESIADA, Marek (Narodowe Centrum Badań Jądrowych)

Session Classification: Gravitational Waves

Track Classification: Gravitational Waves