



Contribution ID: 156

Type: Plenary/Parallel talk

Using gravitational waves to detect dark matter

Wednesday, 24 August 2022 11:45 (20 minutes)

Gravitational-wave interferometers can be used to probe the existence of dark matter. Different types of dark matter, such as primordial black holes, ultralight boson clouds around spinning black holes, axions and dark photons, could leave different imprints on gravitational-wave detectors. While arising from physically different sources, such gravitational-wave and dark-matter signals share common traits, and can be searched for with similar methods. In this talk, I explain how persistent, quasi-monochromatic signals in ground- and space-based detectors could arise from each of the aforementioned dark matter candidates. I also describe various methods and summarize search results from the most recent observing runs of Advanced LIGO, Virgo, and KAGRA.

Primary author: MILLER, Andrew (UCLouvain)

Presenter: MILLER, Andrew (UCLouvain)

Session Classification: Parallel Session Main Cupola: DM

Track Classification: Gravitational waves and black holes