

Contributed Talk

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Title: Gravitational lensing of gravitational waves

Abstract: Gravitational lensing has a long and productive history in electromagnetic astronomy. Lensing can also affect gravitational waves (GWs), though this has not yet been confidently detected due to lensing effects on GWs being subtle to identify and the lensing rate only becoming substantial for the most distant sources. But with the second-generation detectors now observing ever-larger numbers of compact binary coalescences from deeper in the cosmos, our chances for a first detection of GW lensing are rapidly increasing. This talk will cover the basic phenomenology of GW lensing such as lensing magnification, strongly lensed multiple images, and microlensing; as well as the searches for lensing effects performed so far in LIGO-Virgo O1, O2 and O3a data; and future prospects for detections of lensed GWs and their use in cosmology and fundamental physics.