



量子物理学・ナノサイエンス第 92 回特別セミナー

Gravitational Lensing of Gravitational Waves : detection and applications to multi messenger astronomy and cosmology

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所属 : IUCAA, Pune University
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概 要

Gravitational lensing of gravitational waves (GWs) occurs when these GWs encounter large agglomerations of matter, resulting in the production of (resolvable or unresolvable) images. This is a highly anticipated phenomenon expected to be detected in future observing runs of the LIGO-Virgo-Kagra detector network. In this seminar, I will give a brief overview of a few of my works pertaining to this topic. Specifically, I will talk about the data analysis techniques used to detect strongly lensed GWs and how the non-detection of microlensed GWs can enable constraints on the fraction of dark matter as massive compact halo objects. I will additionally look into the future to see if GW lensing can be leveraged as a tool for GW early warning, for identification of compact binary coalescences as progenitors of FRBs, and constraining cosmological parameters.

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