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Probing ultralight fields with inspiral gravitational waves

Tuesday, 9 July 2024 16:05 (20 minutes)

Gravitational waves provide a unique probe to physics in strong gravity regime and dark sector of our universe. In this talk, we will discuss the effects of ultralight fields on binary inspirals, assuming the fields are significantly excited by neutron stars or black holes in the binaries. We will report on a search for axion-like particles by analyzing the gravitational waves from the binary neutron star inspiral GW170817. We will also investigate the prospect of probing ultralight fields with multi-band gravitational wave observations.

Primary author: ZHANG, Jun (International Center for Theoretical Physics Asia-Pacific)

Presenter: ZHANG, Jun (International Center for Theoretical Physics Asia-Pacific)

Session Classification: Micro-Hertz gravitational waves (0.1-100 μHz): sources and detection methods

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