Contribution ID: **32** Type: **not specified**

Utilities of Gravitational Waves for Probing Dark Matter

Friday, 31 August 2018 10:00 (30 minutes)

We propose that LIGO can see the dark matter possibly in the form of a compact object of 10 solar mass or heavier. It is through the fringe signal imprinted on the gravitational wave(GW). The fringe is a frequency-dependent interference pattern induced gravitationally when the GW passes by compact dark matter. Surprisingly, LIGO is the one that can measure this most efficiently. We discuss underlying physics and prospects of the GW fringe measurement.
Refs: [1712.01396], [1710.03269]

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Session Classification: Plenary Session