

Superfluid Optomechanics for dark matter direct detection

Monday, 12 June 2023 17:30 (20 minutes)

The direct detection of light (sub-MeV) dark matter presents a significant challenge due to the need for sub-eV energy thresholds. I will discuss a new proposal to use a superfluid helium optomechanical cavity to search for dark matter in the keV mass range. In this regime, dark matter scattering excites a single phonon in the superfluid helium target. Optomechanical systems have demonstrated sensitivity to individual phonons with meV energies, making them ideally suited to the detection of light dark matter.

Secondary category for the parallel session (optional)

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