Contribution ID: **94** Type: **Oral**

Probing sub-GeV dark matter with superfluid helium

Thursday, 9 November 2023 09:30 (20 minutes)

The Helium Roton Apparatus for Light Dark Matter (HeRALD) experiment will use superfluid 4He to probe unexplored dark matter parameter space. Superfluid helium has several advantages: good kinematic matching to light dark matter candidates, ballistic quasiparticle propagation, scalability, and multiple signal channels for electronic vs. nuclear recoil discrimination. I will discuss recent progress by the TESSERACT collaboration to develop this technology, including work done at LBNL, UC Berkeley, and UMass Amherst. I will focus on detector development and instrumentation.

Early Career

Yes

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Session Classification: Plenary

Track Classification: Plenary: Early Career