



Contribution ID: 50

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## Progress and Plans for the TESSERACT Project

*Tuesday, 7 November 2023 17:00 (15 minutes)*

The TESSERACT collaboration will search for dark matter particles below the proton mass through interactions with two types of novel, ultra-sensitive detectors. These detectors, SPICE & HeRALD, aim to provide leading sensitivities to low mass dark matter candidates. The HeRALD experiment will use superfluid He4 as a target material, which is an ideal kinematic match for dark matter nuclear recoils. SPICE will use different polar crystals with background discrimination to be sensitive to dark photons. Both detectors will be read out by Transition Edge Sensors (TES) that are sensitive to phonon, roton, and light signals from LHe and crystal phonons and photons. In this talk I will be discussing the current R&D progress on SPICE and HeRALD and preliminary simulations of the eventual underground detector.

### Early Career

Yes

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**Session Classification:** RDC7

**Track Classification:** RDC Parallel Sessions: RDC7: Low-Background Detectors