Progress and Results from the TESSERACT Dark Matter Experiment

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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 and HeRALD, aim to provide leading sensitivities to low-mass dark matter candidates. In this talk I will present on the recent progress made toward reaching this goal. First, I will discuss the recent deployment of the HeRALD v0.2 detector at LBNL, as well as analysis highlights from the multi-channel upgrade of the HeRALD v0.1 detector at UMass. Then, I will showcase the achievements SPICE has made towards making world-leading energy resolution TESs. I will detail new insights on the "low energy excess" background and parasitic power relevant to cryogenic detectors. I will finish by highlighting results of TESSERACT's first above-ground dark matter search, which yielded world-leading sensitivity to dark matter below 100 MeV/c².

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