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R&D Status of Low Tc TES for CUPID Light Detectors BRADFORD WELLIVER, Lawrence Berkeley Natl Lab — The Cryogenic Underground Observatory for Rare Events (CUORE) is a search for new physics via lepton number violation (LNV) currently operating at the Laboratori Nazionali del Gran Sasso (LNGS). CUORE utilizes 988 TeO_2 crystals (m = 742 kg) operated as cryogenic bolometers in an attempt to observe neutrinoless double beta decay ($0\nu\beta\beta$), and is expected to achieve a sensitivity to the ^{130}Te $0\nu\beta\beta$ decay half-life of $T_{1/2}$ = 9 x 10^{25} years (90 % C.L.) after 5 years of operation. Beyond this, the CUORE Upgrade with Particle ID (CUPID) program is an attempt to extend the reach of a LNV search by introducing new detection strategies, lower background components, enhanced target masses, while making use of existing infrastructure from CUORE. CUPID will also allow for event by event discrimination, enhancing the ability to reject background. One such technique is to utilize sensitive light detectors that could measure scintillation light from the target mass. This talk will cover the current R&D efforts at LBNL and UC Berkeley on CUPID and in particular the status of developing low-Tc transition edge sensors (TES) with SQUID readout for use in CUPID light detectors.

Bradford Welliver
Lawrence Berkeley Natl Lab

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