



## Poster session 1 - Monday 4 July

### P1.059 CALDER: Kinetic inductance light detectors to search for double beta decay

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Large-mass arrays of bolometers proved to be good detectors to search for Neutrinoless Double Beta Decay. CUORE, a 1-ton bolometric experiment, is expected to start taking data this year at Laboratori Nazionali del Gran Sasso in Italy. CUPID, the proposed CUORE successor, will be an experiment of similar size implementing particle identification, a feature that is presently missing. CALDER is an R&D project to develop cryogenic light detectors to be faced to the bolometers and enable particle identification via the simultaneous readout of heat and light. The goal is to obtain detectors with an active area of  $5 \times 5 \text{ cm}^2$ , operating at 10 mK, and with a baseline resolution better than 20 eV. We have chosen to develop phonon-mediated devices using superconducting KIDs (Kinetic Inductance Detectors), a technology originally developed for astrophysical applications that we are porting to particle physics.

The main advantages of this technology reside in the high level of scalability and reproducibility, in the absence of microphonic noise and in the small temperature dependency. We present the results obtained with aluminum chips and the first results obtained with non-conventional superconductors such as titanium nitride and titanium aluminide.