Contribution ID: **166** Type: **Poster**

CALDER: cryogenic light detectors for background free searches

The achievement of zero background has become crucial for bolometric experiments searching for neutrinoless double beta decay (0nDBD) and Dark Matter interactions.
The CUORE experiment, that will study the 130Te 0nDBD,
could take advantage from the measurement of the tiny Cherenkov light emitted by electrons to reject alpha interactions, that are the dominant background source for 0nDBD.
The LUCIFER experiment, whose main goal is the search for the 0nDBD of 82Se, could reach a competitive sensitivity also on Dark Matter interactions if equipped with light detectors enabling the identification of the background due to electrons.
The interest in sensitive cryogenic light detectors gave birth to the CALDER project,
that will exploit the Kinetic Inductance Detector's technology to develop wide area devices with RMS baseline resolution lower than 20 eV, wide temperature range of operation, and multiplexed read-out, that will be essential for next generation experiments with hundreds of channels.
In this poster we present the current status of CALDER and its applications.

Primary author: Dr CARDANI, Laura (Sapienza, University of Roma)

Co-authors: CRUCIANI, Angelo (Sapienza, University of Roma); D'ADDABBO, Antonio (Institute Néel, Grenoble, France); BUCCI, Carlo (INFN-LNGS, Assergi, Italy); COSMELLI, Carlo (INFN Roma and Sapienza, University of Roma); TOMEI, Claudia (INFN Rome, Italy); PINCI, Davide (Sapienza, University of Roma and INFN-Roma); Dr BATTISTELLI, Elia (Sapienza, University of Roma); BELLINI, Fabio (INFN Roma and Sapienza, University of Roma); VIGNATI, Marco (Sapienza, University of Roma); CASTELLANO, Maria Gabriella (IFN-CNR, Rome, Italy); CALVO, Martino (Néel institute, Genoble, France); DE BERNARDIS, Paolo (Sapienza, University of Roma); DI DOMIZIO, Sergio (INFN and University of Genova, Italy); MASI, Silvia (Sapienza, University of Roma); COPPOLECCHIA, alessandro (Sapienza, University of Roma); COLANTONI, ivan (IFN-CNR, Rome, Italy)

Presenter: Dr CARDANI, Laura (Sapienza, University of Roma)

Track Classification: Neutrinoless Double Beta Decay