Type: Oral

## Background mitigation techniques and projections for the CUORE experiment

Thursday, 25 May 2017 17:30 (20 minutes)

The Cryogenic Underground Observatory for Rare Events (CUORE) will search for the neutrinoless doublebeta  $(0\nu\beta\beta)$  decay of <sup>130</sup>Te using a 19 tower array of 988 high-resolution TeO<sub>2</sub> bolometers. The goal of CUORE is to reach a  $2 \times 10^{26}$  year 1-sigma sensitivity on the <sup>130</sup>Te  $0\nu\beta\beta$  decay half-life, which CUORE can achieve if the background index is the order of  $10^{-2}$  counts·keV<sup>-1</sup>·kg<sup>-1</sup>·y<sup>-1</sup> or less. We will discuss the status of the CUORE experiment, in particular, the background mitigation techniques employed by CUORE. We will also present the results from CUORE-0, a single-tower array of 52 bolometers that ran from 2013 to 2015 at LNGS and was used to validate these background mitigation techniques.

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