XVIII International Conference on Topics in Astroparticle and Underground Physics (TAUP 2023)



Contribution ID: 557

Type: Poster

Analysis techniques for the search of neutrinoless double-beta decay of Te-130 with CUORE

Wednesday 30 August 2023 15:54 (1 minute)

The CUORE (Cryogenic Underground Observatory for Rare Events) experiment at Gran Sasso National Laboratory in Italy primarily searches for neutrinoless double-beta decay of ¹³⁰Te. The CUORE detector consists of a close-packed array of 988 TeO₂ calorimetric detectors cooled to ~10 mK using a custom-built cryogen-free dilution refrigerator. The experiment is the first to demonstrate stable operation of a tonne-scale milli-kelvin cryogenic calorimeter. We present the analysis techniques used for the latest CUORE data release, focusing on the methods that have been updated relative to our 1 tonne-year analysis. We describe the analysis chain, event selection, and our evaluation of the detector response.

Submitted on behalf of a Collaboration?

Yes

Author: Dr ALFONSO, Krystal (Virginia Polytechnic Institute and State University, Blacksburg, VA, USA)

Presenter: Dr ALFONSO, Krystal (Virginia Polytechnic Institute and State University, Blacksburg, VA, USA)

Session Classification: Poster session

Track Classification: Neutrino physics and astrophysics