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

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The CUORE (Cryogenic Underground Observatory for Rare Events) experiment at Gran Sasso National Laboratory in Italy primarily searches for neutrinoless double-beta decay of ^{130}Te . The CUORE detector consists of a close-packed array of 988 TeO_2 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

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