

Search for Fractionally-Charged Particles with CUORE

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While primarily searching for neutrinoless double-beta decay in ^{130}Te , CUORE demonstrates that bolometric detectors have reached sufficient size and scale to track through-going particles. Novel track-reconstruction tools and analysis techniques have been developed to study track-like events in the detector, including exotic signatures such as those induced by hypothetical fractionally-charged particles (FCPs) which arise from Beyond-the-Standard Model extensions. Experiments such as CUORE compliment collider-based and bulk matter searches for FCPs by looking for track-like signatures with suppressed energy deposition, on account of their reduced electric charge. We exploit the experiment's low-background environment to report on a search for an underground flux of fractionally charged particles with CUORE.

Poster prize

Yes

Given name

Daniel

Surname

Mayer

First affiliation

Massachusetts Institute of Technology

Second affiliation

Institutional email

dmayer@mit.edu

Gender

Male

Collaboration (if any)

CUORE Collaboration

Primary author: MAYER, Daniel (Massachusetts Institute of Technology)

Presenter: MAYER, Daniel (Massachusetts Institute of Technology)

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