

Enhancing CUORE Data Quality with Denoising Techniques

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The Cryogenic Underground Observatory for Rare Events (CUORE) experiment, located at the Gran Sasso National Laboratory in Italy, is an ongoing search for neutrinoless double beta decay. Previous work has shown that the quality of CUORE data can be enhanced through noise decorrelation algorithms utilizing auxiliary devices such as microphones, accelerometers, and seismometers. Here, I will showcase the application of these algorithms in improving CUORE's data quality, including enhancing detector baseline resolution, thus enabling lower thresholds and improved coincidence tagging. Additionally, I will outline the anticipated benefits of noise decorrelation on ongoing and future CUORE datasets, leveraging an expanded array of auxiliary devices including antennas and additional accelerometers.

Poster prize

Yes

Given name

Kenneth

Surname

Vetter

First affiliation

UC Berkeley

Second affiliation

Institutional email

kenneth_vetter@berkeley.edu

Gender

Male

Collaboration (if any)

CUORE Collaboration

Autore principale: VETTER, Kenneth

Relatore: VETTER, Kenneth

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