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The Bayesian software for the $0\nu\beta\beta$ CUORE analysis

CUORE (Cryogenic Underground Observatory for Rare Events) is a tonne-scale cryogenic detector located at LNGS exploiting bolometric technique to search for neutrinoless double beta decay ($0\nu\beta\beta$) of ^{130}Te . The experimental signature is a sharp peak at the Q value in the summed energy spectrum of the emitted electrons. In this contribution, we present a thorough description of the software for the $0\nu\beta\beta$ fit that was developed for the last data release. It is based on BAT (Bayesian Analysis Toolkit) and follows a Bayesian statistical approach. We show how the model is implemented, the treatment of systematics and the interpretation of results.

Mini-abstract

The new Bayesian software for the neutrinoless double beta decay analysis with the CUORE experiment.

Experiment/Collaboration

CUORE

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