



Contribution ID: 148

Type: **Poster**

Waveform Denoising in EXO-200

Neutrinoless double-beta decay experiments search for a rare mono-energetic decay process. Their sensitivity is determined in part by their energy resolution. The EXO-200 experiment searches for neutrinoless double-beta decay of xenon-136 and has a resolution which is limited by noise in the scintillation channel. Here we present a new technique for denoising the scintillation waveforms in offline analysis, improving our time-averaged energy resolution by more than 20% to an average 1.53% σ/E at 2458 keV. Application of this technique results in a 90% CL half-life limit of $1.1e25$ years, corresponding to a Majorana mass limit of 190-450 meV. (Submitted on behalf of the EXO-200 collaboration.)

Primary author: DAVIS, Clayton G. (University of Maryland)

Presenter: DAVIS, Clayton G. (University of Maryland)

Track Classification: Neutrinoless Double Beta Decay