

## Characterization of the NEXT-White Detector with Calibration Data

The NEXT (Neutrino Experiment with a Xenon TPC) experiment will search for neutrinoless double-beta ( $0\nu\beta\beta$ ) decay in  $^{136}\text{Xe}$  with a high pressure xenon gas time projection chamber (TPC). Two principle advantages of the NEXT approach are good energy resolution and topology-based event classification. We describe initial results from the first phase of the experiment, the detector NEXT-White deployed in the Canfranc Underground Laboratory in the Spanish Pyrenees, demonstrating recent progress towards sub-1% energy resolution at the  $^{136}\text{Xe}$  double-beta Q-value. We also present the results of a topological analysis, using electron-positron pair events in place of the two-electron events expected from  $0\nu\beta\beta$ , which demonstrates how such events can be distinguished from background (single-electron) events of the same energy through the use of deep neural networks (DNNs).

### Authorship annotation

for the NEXT collaboration

### Session and Location

Monday Session, Poster Wall #61 (Auditorium Gallery Right)

### Poster included in proceedings:

yes

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