

Contribution ID: 477

Type: Poster

Development of a High-Pressure Scintillator Test Cell for Double Beta Experiments

The investigation of two-neutrino and neutrino-less double beta decay is crucial for understanding the Dirac or Majorana nature of neutrinos.

In this context, the krypton isotope Kr-78 (Q=2.88 MeV) stands out as a promising candidate for a first detection of two-neutrino ECb+ and 2b+ decays.

Detectors like the proposed NuDoubt++ experiment featuring opaque scintillator or an upgrade of the OSIRIS detector with hybrid scintillator can profit from solving the krypton gas in the scintillator at high pressure to increase the loading factor.

This poster explores the loading process and challenges in a small-scale scintillator test cell and the characterization techniques for determining the loading factor.

Secondary track

T03 - Neutrino Physics

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Track Classification: T11 - Detectors