



ID de la contribución : 1100

Tipo : Talk

## Results from the first run of the NEXT-100 detector

*miércoles, 19 de noviembre de 2025 15:45 (15)*

The NEXT experiment aims to detect neutrinoless double beta decay in  $^{136}\text{Xe}$  using a high-pressure gas Time Projection Chamber with electroluminescent amplification. This technology features an excellent energy resolution ( $<1\%$  FWHM @  $Q_{\beta\beta}$ ) and the ability to extract topological information for background rejection. The physics program of NEXT-White, a  $\sim 5$  kg detector, was successfully completed in 2022 with the first double beta decay measurements. The collaboration has since begun operating NEXT-100, a detector twice the size in each dimension capable of holding  $\sim 100$  kg of xenon at 15 bar. Located at Laboratorio Subterráneo de Canfranc (LSC), NEXT-100 aims to demonstrate quasi-background-free conditions for this technology at the 100 kg scale. The detector has recently concluded its first run at a reduced pressure of 4 bar and will begin its physics run at high pressure in early 2026. In this presentation, we will report the status of the detector, summarize the main results from the commissioning, calibration, and background assessment campaigns, as well as outline the plans for the next stage of operation.

### Abstract

**Primary author(s)** : MARTÍNEZ LEMA, Gonzalo (IFIC / UV)

**Presenter(s)** : MARTÍNEZ LEMA, Gonzalo (IFIC / UV)

**Clasificación de la sesión** : RENATA (Red Nacional Temática de Astropartículas)

**Clasificación de temáticas** : Red Temática de Astropartículas (RENATA)