

## **NEXT: A Neutrinoless Double Beta Decay Experiment with a Gaseous Xenon TPC**

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NEXT (Neutrino Experiment with a Xenon TPC) is a double beta experiment aiming to explore the degenerated hierarchy, with a sensitivity better than 100 meV. To do this the NEXT collaboration is planning to build a high pressure xenon TPC of about 100 kg, operated in the underground lab Canfranc. The advantage of a gaseous TPC is that it provides not only a good energy resolution but measuring in addition the event topology provides additional background suppression. The baseline design foresees to operate the detector with an electroluminescence readout which provides the best energy resolution achievable in pure xenon at high pressures. While the energy measurement is planned to be done with a few hundred PMTs, one of the challenges is to develop a UV light readout system for the tracking.

In the presentation the detector concept and the R&D status will be presented.

**Primary authors:** Dr GARCIA IRASTORZA, Igor (University of Zaragoza); Dr GIL BOTELLA, Ines (CIEMAT); Prof. DOS SANTOS, Joaquim (University of Coimbra); Prof. GOMEZ CADENAS, Juan Jose (IFIC); Dr LUX, Thorsten (IFAE)

**Presenter:** Dr LUX, Thorsten (IFAE)

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