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Status of the NEXT experiment and future perspectives for HPXe-based DBD searches[1]

JUAN CADENAS[2], IFIC (CSIC-U. Valencia)

Neutrinos may be Majorana particles. If so, neutrinoless double beta decay processes could be observed by the next-generation bb0nu experiments. This talk will present one of the most promising ideas in the field, the use of a High Pressure Gas Xenon TPC (HPGXe) with electroluminescence gain and optical readout. A 100 kg incarnation of such a device, the NEXT-100 experiment, will start operations at the Canfranc Underground Lab in Spain in 2015. The technology can be extrapolated to 1 ton, and thus lead the exploration of the inverse hierarchy in Majorana landscape.

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[2]In collaboration with Dave Nygren, Lawrence Berkeley National Laboratory