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NEXT status and prospects

Neutrinoless double beta decay is a hypothetical rare process that violates lepton number conservation and implies the Majorana nature of neutrinos, which could also give insight into their absolute mass scale. The NEXT collaboration searches for such decay with Xe-136, exploiting high-pressure xenon gas TPCs with electroluminescent amplification. The principal trademarks of the experiment include an excellent energy resolution at the Qbb (<1% FWHM), as well as a highly defined topology reconstruction of events, that boosts the signal-over-background discrimination. Once the data-taking period of the NEXT-White demonstrator has ended, its latest results are presented here. Apart from that, the status of NEXT-100 and prospects for ton-scale and beyond R&D comprise an important part of the talk.

Author: USÓN ANDRÉS, Alberto
Orateur: USÓN ANDRÉS, Alberto
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