

NEXT: Measuring $0\nu\beta\beta$ in High Pressure Xenon Gas Time Projection Chambers

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The NEXT collaboration is developing a sequence of high pressure xenon gas time projection chambers with the aim of creating a ton-scale, very low background neutrinoless double beta decay search. Finding evidence of neutrinoless double beta decay would give insight into the origins of the matter-antimatter asymmetry in the universe, the smallness of neutrino mass, and the symmetry structure of the Standard Model. This talk will present the status of the NEXT program, including results from the operating NEXT-White detector, construction of NEXT-100, and ongoing R&D efforts to tag the barium ion produced in the decay.

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