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Neutrinoless double beta decay with EXO-200

Tuesday, 5 May 2015 16:00 (15 minutes)

The Enriched Xenon Observatory (EXO-200) is one of the most sensitive searches for neutrinoless double beta decay (bb0v) in the world. With 175 kg of enriched liquid xenon (80% Xe-136) as both the source of decay and the detection medium, the experiment uses an ultralow background time projection chamber installed at the Waste Isolation Pilot Plant, a salt mine with a 1600 m water equivalent overburden. The EXO-200 detector has demonstrated excellent energy resolution and background rejection capabilities in setting a limit of 1.1x10^25 yr at 90% C.L. on the bb0v half-life of Xe-136. The current results from the two years of data-taking will be presented. Due to the success of EXO-200, the tonne scale next generation experiment, nEXO, is being developed with a target sensitivity to bb0v half-life of Xe-136 of 5x10^27 yr.

Summary

Talk on the status of the EXO-200 experiment and a little bit on nEXO.

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