

Abstract Submitted
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Barium tagging R&D for the EXO double beta decay experiment

CARTER HALL, University of Maryland, EXO COLLABORATION — The EXO collaboration is developing and executing large scale experiments to search for the neutrinoless double beta decay of Xenon-136. This decay, if observed, would have far reaching implications for neutrino physics, including the identification of the neutrino as a Majorana particle. One attractive feature of Xenon-136 as a double beta decay source is the possibility that the daughter nucleus produced by the decay (Barium-136) could be identified on an event-by-event basis through its unique spectroscopic signature. The technology to observe single barium ions in an ion trap was first developed by atomic physicists in the 1970's and 1980's. We will describe in this talk the current status of our efforts to apply this technique to address one of the most important problems in nuclear and particle physics today.

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