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EXO - Status of Ba tagging R&D activities MICHAL TARKA, University of Illinois, Physics Department — The Enriched Xenon Observatory (EXO) is a low-background experiment searching for the neutrinoless double beta decay (0vbb) of Xe136 using a Time Projection Chamber (TPC). The 0vbb decay is currently the only way to test the Majorana nature of neutrinos. The EXO-200 experiment is located at the Waste Isolation Pilot Plant (WIPP, 1600 m.w.e. overburden) in New Mexico and has been running since May 2011 with 175 kg of liquid Xe enriched to 80%. With a background index of 1.5×10^{-3} counts/kg/year/keV in the region of interest around the end point of the bb decay of Xe-136, the setup has set a lower limit for 0nbb of $T_{1/2} > 1.6 \times 10^{25}$ years (90% CL). The Ba-136 resulting from the bb decay of Xe-136 could be used for bb event identification against background and the development of an efficient Ba tagging technique is one of the long-term goals of the EXO collaboration. Ba tagging could virtually eliminate background thus boosting the senitivity of the experiment. This talk will outline the Ba tagging activities performed by the EXO collaboration and present the latest progress and results towards an efficient and reliable Ba tagging system.

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