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Characteristic Signal of Neutron-Antineutron Oscillation in Argon Nuclei at DUNE.[1] JOSHUA BARROW, YURI KAMYSHKOV, BEN RYBOLT, University of Tennessee, DEEP UNDERGROUND NEUTRINO EXPERIMENT COLLABORATION — Babu et al. have recently proposed a model of post-sphaleron baryogenesis following the electroweak phase transition. Their theory naturally gives rise to a plausible baryon abundance and a ΔB=2 six-quark operator which allows for the generation of nbar from n. Using n bound in Ar, DUNE currently plans to include n-nbar events in their nucleon decay searches. Using GENIE, modeling is underway on intranuclear interactions mimicking n-nbar annihilation in Ar nuclei. Eliminating atmospheric ν background from such events will be a challenge for liquid Ar TPCs at DUNE, so simulation work must be considered for ν interactions in Ar nuclei, which produce similar signals to n-nbar annihilation. Key to understanding possible experimental signals will be the integration of these two for a proper robust analysis, which will determine the viability of any detection of this process above background levels.

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