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Analysis of Cosmic Ray Backgrounds for Double-Beta Decay Experiments MITCHELL HUGHES, The University of Alabama — In neutrinoless double-beta decay searches, such as EXO-200 and nEXO, cosmic ray muons constitute a significant background because they induce signals mimicking the rare decays under observation. Specifically, spallation neutrons produced by these muons may capture on detector and shielding components, producing long-lived unstable isotopes whose decays fall within the double-beta decay region of interest. Cosmogenic neutron backgrounds have been studied in EXO-200, which features an array of muon veto panels in addition to its primary detector, a time projection chamber enriched in 136-Xe. By selecting events occurring shortly after a muon panel trigger, a neutron-enriched data set may be composed and compared against Monte Carlo simulations of anticipated background contributions. Results and conclusions from this study will be discussed.

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