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Cosmic ray muons in the PROSPECT reactor antineutrino detector JAMES MINOCK[1], Drexel Univ, PROSPECT COLLABORATION — The Reactor Antineutrino Anomaly is an observed deficit of the measured antineutrino flux compared with theoretical predictions. One possible explanation for this could be the existence of a non-weakly interacting neutrino flavor causing electron antineutrino disappearance via neutrino oscillations at a new, heavier neutrino mass scale. PROSPECT, the Precision Reactor Oscillation Spectrum Experiment, seeks to address the Reactor Antineutrino Anomaly through precise short-baseline measurements of the antineutrino spectrum of uranium-235 at a distance of 7-11 m from the High Flux Isotope Reactor (HFIR) at Oak Ridge National Laboratory. As a neutrino detector operated on the surface, PROSPECT requires active background rejection and an accurate measurement of background events during reactor-off periods. One significant background component is through going muons from cosmic ray showers. This talk will address efforts to understand the nature and time dependence of cosmic ray muon backgrounds at HFIR by comparing PROSPECT data with simulation results.

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