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Calibration and Initial Performance of the PROSPECT Detector[1]

JEREMY GAISON, Yale University, PROSPECT COLLABORATION — PROSPECT, the Precision Reactor Oscillation and Spectrum Experiment, consists of a segmented liquid scintillator antineutrino detector designed to probe short-baseline neutrino oscillations and precisely measure the antineutrino spectrum of the primary fission isotope U-235 at the High Flux Isotope Reactor at Oak Ridge National Laboratory. To achieve these physics goals, precise understanding of the energy response in each of 154 individual segments is essential. PROSPECT uses a distributed array of optical and radioactive sources to understand the detector response. This talk will describe the design and implementation of PROSPECT's calibration systems and provide a first look at calibration and performance of the detector.

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