

Abstract Submitted
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Background and Detector Response Studies With PROSPECT Prototype Detectors PRANAVA TEJA SURUKUCHI, Illinois Institute of Technology, PROSPECT COLLABORATION — PROSPECT, the Precision Reactor Oscillation and Spectrum Experiment, is a short baseline experiment to measure the reactor antineutrino spectrum from a highly-enriched ^{235}U reactor. PROSPECT will utilize an antineutrino target composed of optically segmented ^6Li loaded liquid scintillator cells with PMTs on each end of each cell. A two meter-long, 23 liter rectangular prototypes were deployed to study the performance of the PROSPECT unit scintillator cell as well as to make in-situ background radiation measurements at the intended PROSPECT deployment location near the High Flux Isotope Reactor at Oak Ridge National Laboratory. The light collection and pulse-shape discrimination are characterized for different reflector, PMT, and DAQ configurations using varied gamma and spontaneous fission calibration sources at several positions along the cells. This talk will focus on the measurement of backgrounds and study of PSD and light collection of these prototype cells

Pranava Teja Surukuchi
Illinois Institute of Technology

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