

Abstract Submitted  
for the DNP15 Meeting of  
The American Physical Society

**Characterization of Detector Response for PROSPECT – A Precision Reactor Oscillation and SPECTrum Measurement** BRIAN GODDARD, MICHELLE DOLINSKI, Drexel University, PROSPECT COLLABORATION — Recently, several experiments have reported an approximately 5% deficit of antineutrinos from nuclear reactors when the measured flux is compared with that predicted by current nuclear models. This is termed the “Reactor Antineutrino Anomaly”. Furthermore, the predicted shape of the antineutrino spectrum is not in agreement with measurements from those experiments. The PROSPECT (Precision Reactor Oscillation and SPECTrum Measurement) collaboration plans to investigate this anomaly and constrain the shape of the spectrum with a high precision, short baseline (7-20m) measurement of the antineutrino spectrum from Oak Ridge National Laboratory’s High Flux Isotope Reactor (HFIR) which will include a search for sterile neutrinos as one possible solution to the anomaly. PROSPECT will utilize a segmented, lithium-loaded liquid scintillator detector and is taking a phased approach to detector design by building progressively larger prototypes of this final detector with several prototypes already constructed and taking data. This poster will report on the ongoing analysis of the detector response of these prototypes including aspects such as position reconstruction, energy resolution, and pulse shape discrimination.

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Date submitted: 01 Aug 2015

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