



Poster session 3 – Wednesday 6 July

P3.055 PROSPECT – A precision oscillation and spectrum experiment for reactor antineutrinos

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on behalf of PROSPECT collaboration

Recent studies of reactor antineutrinos have revealed anomalous results in the measurement of the reactor flux and spectrum when compared to model predictions. These discrepancies may be a sign of incomplete models or an indication of new physics. PROSPECT, the Precision Reactor Oscillation and Spectrum Experiment, is designed to make a precision measurement of the antineutrino spectrum from a research reactor and search for shortbaseline oscillations. Using Li-loaded, liquid scintillator detectors at a distance of ~7-19m from the High Flux Isotope Reactor (HFIR) at Oak Ridge National Laboratory (ORNL), PROSPECT will improve our understanding of reactor antineutrino production through a precision measurement of the ^{235}U spectrum from a Highly Enriched Uranium (HEU) reactor. In addition, PROSPECT will make a definitive test of eV-scale sterile antineutrinos as a proposed solution to the current anomalies. We will describe the design, experimental program, and discovery potential of the experiment.