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PROSPECT: The Precision Reactor Oscillation and Spectrum Experiment¹

JAMES MATTA², Oak Ridge National Laboratory

The PROSPECT experiment is designed to probe short-baseline neutrino oscillations and precisely measure the ^{235}U reactor antineutrino spectrum. Using a ~ 4 -ton segmented ^6Li -loaded liquid scintillator detector, PROSPECT will probe the sterile neutrino best fit region to 4σ within one year of operation at distances of 7-12 meters from the High Flux Isotope Reactor (HFIR). Additionally, the measurement of the ^{235}U spectrum at $4.5\%/\sqrt{E}$ will address the 4-6MeV spectral bump observed in recent measurements by the θ_{13} experiments. This talk will discuss the design, experimental program, backgrounds, and discovery potential of PROSPECT.

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²on behalf of the PROSPECT collaboration