

Abstract Submitted
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Optimization of Pulse Shape Discrimination of PROSPECT Liquid Scintillator Signals KE HAN, Yale University, PROSPECT COLLABORATION — PROSPECT, A Precision Oscillation and Spectrum Experiment, will use a segmented Li-6 doped liquid scintillator detector for precision measurement of the reactor anti-neutrino spectrum at the High Flux Isotope Reactor at Oak Ridge National Laboratory. PROSPECT also searches for very short baseline neutrino oscillation, an indication of the existence of eV-scale sterile neutrinos. Pulse shape analysis of the prompt anti-neutrino signal and delayed neutron capture on Li-6 signal will greatly suppress background sources such as fast neutrons and accidental coincidence of gammas. In this talk, I will discuss different pulse shape parameters used in PROSPECT prototype detectors and multivariate optimization of event selection cuts based on those parameters.

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