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The PROSPECT Short-Baseline Reactor Experiment BRYCE LITTLEJOHN, Illinois Institute of Technology, PROSPECT COLLABORATION — PROSPECT is a reactor antineutrino experiment whose primary goals are to probe short-baseline oscillations and perform a precise measurement of the U-235 reactor antineutrino spectrum. The PROSPECT detector has collected data at the High Flux Isotope Reactor (HFIR) at the Oak Ridge National Laboratory, with the active volume covering a baseline range of 7-9m. To operate in this environment with tight space constraints, limited overburden and the possibility of reactor-correlated backgrounds, the PROSPECT AD incorporates design features that provide excellent background rejection. These include segmentation and the use of Li-6 doped liquid scintillator with good pulse-shape discrimination properties. In this presentation, we will describe the performance of the PROSPECT detector and the results obtained to date including the detection of reactor antineutrinos with essentially no overburden, the first oscillation exclusion determined by the experiment, and the highest statistics U-235 reactor antineutrino energy spectrum reported to date, The current status and plans for future improvements to the experiment will also be described.

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