

Abstract Submitted
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PROSPECT: A Precision Reactor Oscillation and Spectrum Experiment BRYCE LITTLEJOHN, University of Cincinnati, PROSPECT COLLABORATION — Antineutrino detectors operated close to a compact reactor core can provide excellent sensitivity to short-baseline oscillation effects by precisely measuring any relative distortion of the $\bar{\nu}_e$ spectrum as a function of both energy and baseline. Such a measurement can be performed in the United States at several highly-enriched uranium fueled research reactors using near-surface segmented scintillator detectors. This talk will describe the preliminary conceptual design and oscillation physics potential of the PROSPECT experiment, a U.S.-based, multi-phase, 2-detector experiment with reactor-detector baselines of 4-20 meters capable of excluding a majority of the suggested sterile neutrino oscillation parameter space at high confidence level. Additional goals, such as precise measurement of the $\bar{\nu}_e$ spectrum from a highly-enriched uranium core, as well as development of detection techniques and technology for reactor monitoring applications, will be discussed.

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