



Contribution ID: 439

Type: **Oral Presentation**

A Search for Sterile Neutrinos with PROSPECT

Tuesday, 30 July 2019 17:15 (15 minutes)

The Precision Reactor Oscillation and Spectrum Experiment (PROSPECT) performs a precision measurement of reactor antineutrinos through inverse beta decay at a baseline range of 7-9 m from the core of the High Flux Isotope Reactor (HFIR). The single, movable detector has a segmented design of 154 optically separated individual segments that serves multiple purposes. Segments, filled with ^6Li -loaded liquid scintillator, cover a range of baselines from the reactor core and allow precise event localization. A reactor-model independent search of eV²-scale sterile neutrino oscillations is achieved by performing a relative measurement of the antineutrino event rates and energy distributions between segments within the detector. This talk will discuss the PROSPECT oscillation analysis and present recent results.

This material is based upon work supported by the U.S. Department of Energy Office of Science and the Heising-Simons Foundation. Additional support is provided by Illinois Institute of Technology, LLNL, NIST, ORNL, Temple University, and Yale University. We gratefully acknowledge the support and hospitality of the High Flux Isotope Reactor, managed by UT-Battelle for the U.S. Department of Energy.

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Session Classification: Neutrino Physics

Track Classification: Neutrino Physics