Contribution ID: **67** Type: **Poster**

Precision neutrino spectrum measurement and search for sterile neutrino with on-surface experiment PROSPECT

Deployed at the High Flux Isotope Reactor (HFIR) at Oak Ridge National Laboratory (ORNL), PROSPECT is a reactor-based short-baseline experiment designed to make high-precision anti-neutrino spectrum measurements from highly enriched U235 reactor and search for possible sterile neutrino oscillation. The on-surface anti-neutrino detector consists of 4-ton 6Li loaded liquid scintillator optically separated into 14 by 11 segments enabling model-independent search for eV2-scale sterile neutrino oscillations. With minimal overburden, reactor anti-neutrinos are detected at 5 σ within 2 hours of operation. The detector has been taking data for almost a full year since March 2018 and upgrade plans are underway for better statistics for spectrum and oscillation analysis.

Authors: LU, Xiaobin; Dr GALINDO-URIBARRI, Alfredo (Oak Ridge National Laboratory)

Presenter: LU, Xiaobin