

PROSPECT: a Precision Reactor Oscillation and SPECTrum Short-Baseline Antineutrino Experiment

Wednesday, 30 May 2018 15:00 (20 minutes)

PROSPECT (Precision Reactor Oscillation and SPECTrum) is a short-baseline reactor antineutrino experiment. PROSPECT consists of a segmented 4-ton ${}^6\text{Li}$ liquid scintillator antineutrino detector that will precisely measure the ${}^{235}\text{U}$ fission antineutrino spectrum from the High-Flux Isotope Reactor (HFIR) at Oak Ridge National Laboratory (ORNL). PROSPECT's high statistics and high resolution measurements of the antineutrino energy spectrum and flux from HFIR's ${}^{235}\text{U}$ core will be vital to understanding the discrepancies between predicted and measured antineutrino spectra and fluxes observed in previous commercial power reactor neutrino experiments; in addition, PROSPECT will search for the existence of sterile neutrino oscillations at the eV-scale. PROSPECT's assembly was completed in late 2017 and data taking at HFIR began in 2018. This talk will explain PROSPECT's physics objectives, describe its experimental design, and cover its installation and initial data-taking at ORNL.

E-mail

me.Bryce@gmail.com

Collaboration name

PROSPECT

Primary author: Prof. LITTLEJOHN, Bryce (IIT)

Presenter: Prof. LITTLEJOHN, Bryce (IIT)

Session Classification: Neutrino Masses and Neutrino Mixing

Track Classification: NMNM