Contribution ID: **265** Type: **Talk**

The MicroBooNE Liquid Argon Time Projection Chamber Experiment at Fermilab

Thursday 28 August 2014 16:50 (20 minutes)

Liquid argon time projection chambers (LArTPC), due to their fine-grained tracking and calorimetric capabilities, provide an unprecedented amount of detail to study neutrino interactions in argon and are quickly becoming the desirable technology choice for future neutrino experiments. Various efforts are ongoing at Fermi National Accelerator Laboratory (Fermilab) to develop this intriguing technology. One of these efforts is the MicroBooNE experiment, a 170-ton LArTPC in its final stages of assembly and construction, scheduled to start taking data soon with Fermilab's Booster Neutrino Beam. In addition to addressing the low-energy electron-like excess observed by the MiniBooNE experiment, the exceptional particle-identification capability of MicroBooNE will make it possible for the first time to measure low-energy (~1 GeV) neutrino cross-sections as well as final-state interactions and other nuclear effects in neutrino interactions in argon with high precision. This talk will discuss the prospects of such measurements, give an overview of the reconstruction techniques used in LArTPC's and also give an overview of the experiments current status and other interesting physics goals.

Primary author: Mr ASAADI, Jonathan (Syracuse University)

Presenter: Mr ASAADI, Jonathan (Syracuse University)

Session Classification: Neutrinos and related astrophysical implications

Track Classification: 3) Neutrinos and related astrophysical implications