Contribution ID: **193** Type: **Oral**

Understanding neutron yield from neutrino interactions with ANNIE

Thursday 10 August 2017 17:30 (15 minutes)

Neutron tagging is a promising experimental technique for separating between signal and background in a wide variety of astroparticle measurement. The Accelerator Neutrino Neutron Interaction Experiment (ANNIE) located along the Booster Neutrino Beam at Fermilab has a goal of measuring the final state neutron multiplicity from charged current neutrino-nucleus interactions within the gadolinium-loaded water. Currently, ANNIE is running in Phase-I and it will be upgraded to Phase-II in the summer of 2017, by installing Large Area Picosecond Photodetectors (LAPPDs) in the detector. LAPPDs are a novel photodetector technology with single photoelectron time resolutions less than 100 picoseconds, and spatial imaging capabilities to within a single centimeter. They will play a crucial role to separate events of charged-current quasi-elastic (CCQE) interactions and inelastic multi-track charged current interactions. In this talk, we discuss the current status and future plans of the experiment.

Authors: Dr TIRAS, Emrah (Iowa State University); Prof. WETSTEIN, Matthew (Iowa State University)

Presenters: Dr TIRAS, Emrah (Iowa State University); Prof. WETSTEIN, Matthew (Iowa State University)

Session Classification: Particle physics

Track Classification: Particle physics (energy frontier, intensity/precision frontier, other theory)