

High Energy Particle Seminar

Wednesday, December 4, 2019 / 705 Pupin Hall / 2:40 PM (*special time*)

Wouter Van de Pontseele - Harvard University

"The MicroBooNE Neutrino Experiment at Fermilab"



MicroBooNE is a liquid argon time projection chamber in the Booster Neutrino Beam at Fermilab. The technology provides high-resolution imaging of neutrino interactions leading to low-threshold event reconstruction with full angular coverage. As such, this is an ideal place to probe neutrino-argon interactions in the hundreds-of MeV to few-GeV energy range. This talk presents a start-to-end overview demonstrating the physics capabilities of the detector. I will talk about cosmic ray measurement and characterisation, our dominant background. Furthermore, I will describe the flavour-agnostic neutrino pre-selection, based on the combination of the charge collected by the TPC and the optical information from the PMT system. An overview of recent measurements of neutrino interactions in MicroBooNE, including inclusive charged-current interactions, will be given. I will conclude summarising the ongoing efforts towards our first low-energy-excess results, demonstrating our capability to identify electron neutrinos.