



Contribution ID : 512

Type : **Oral presentation**

LBNE in the Precision Era of Neutrino Oscillation: Status and Schedule

Thursday, 3 July 2014 16:30 (13)

LBNE (Long-Baseline Neutrino Experiment) is an accelerator-based neutrino oscillation experiment. LBNE will produce a muon-neutrino beam using protons from Fermilab's Main Injector and will detect electron-neutrino appearance and muon-neutrino disappearance using a Liquid Argon TPC located at a distance of 1300 km at Sanford Underground Research Facility in South Dakota. The primary physics motivation of LBNE is to determine the neutrino mass hierarchy, to determine the octant of the neutrino mixing angle θ_{23} , to search for CP violation in neutrino oscillation, and ultimately, to precisely measure the size of any CP-violating effect that is discovered. The status of LBNE and the physics potential of the LBNE research program will be described including the underground physics, in particular atmospheric neutrinos, proton decay, and supernova neutrinos, which are also primary physics goals of LBNE.

Summary

Primary author(s) : Prof. PAOLONE, Vittorio (University of Pittsburgh)

Presenter(s) : Dr. DJURCIC, Zelimir (Argonne National Laboratory)

Session Classification : Neutrino Physics

Track Classification : Neutrino Physics