Contribution ID: **44** Type: **not specified**

Measuring CP-violation with Sub-GeV Atmospheric Neutrinos

Monday, 21 September 2020 11:00 (10 minutes)

Liquid Argon TPC (LarTPC) detectors have a unique capability in measuring low energy neutrino signals. In this work, we study the DUNE sensitivity to the CP-violation phase using sub-GeV atmospheric neutrinos. LarTPCs would reconstruct with high accuracy the track and the energy of low-energy charged particles, allowing to infer the energy and direction of sub-GeV neutrinos with unprecedented precision. Combining the sensitivity of events with 0,1 and 2 observable protons in the final state, the results indicate that DUNE would be able to exclude several delta_CP values at more than 3\sigma of CL using only atmospheric neutrinos.

Primary author: MARTINEZ SOLER, Ivan Jesus (Fermilab and Northwestern U.)

Presenter: MARTINEZ SOLER, Ivan Jesus (Fermilab and Northwestern U.)

Session Classification: Contributed 02