

The 21st International Workshop on Neutrinos from Accelerators (NUFACT2019)

Contribution ID: 128

Type: **Oral Presentation**

Details of the new NOvA oscillation analyses

Thursday, August 29, 2019 11:00 AM (30 minutes)

NOvA is a world-leading long-baseline neutrino oscillation experiment. It uses the 700 kW NuMI beam at Fermilab to send muon neutrinos to two functionally identical detectors, located slightly off the beam axis. The Near Detector is located underground in Fermilab, while the much bigger 14 kton Far Detector sits on the surface, 810 km further away, in Minnesota. They share the same experimental design in an effort to largely reduce the flux and cross-section systematic uncertainties. They are composed of plastic cells filled with liquid scintillator. The fine granularity allows the detection and identification of particle interactions in the detectors, notably muon and electron neutrino interactions. Thus, NOvA can measure the electron neutrino and antineutrino appearance rates, as well as the muon neutrino and antineutrino disappearance rates, in order to constrain the neutrino oscillations parameters, the neutrino mass hierarchy and the CP-violating phase δ_{CP} . This talk will present in details some of the techniques and tools used in the latest NOvA oscillation analyses, combining both neutrino and antineutrino data.

Working Group

WG1 : Neutrino Oscillation Physics

Primary author: CALVEZ, Steven (Colorado State University)

Presenter: CALVEZ, Steven (Colorado State University)

Session Classification: Working Group 1