

The astrophysics program of the NOvA experiment

Friday, 29 October 2021 15:00 (20 minutes)

The NOvA experiment is aimed to solve the fundamental neutrino problems: precise determination of neutrino oscillation parameters, determination of neutrino mass hierarchy, search for the CP-violation in the leptonic sector. NOvA consists of the near detector on the Fermi National Laboratory site, where the muon neutrinos are produced in the NuMI accelerator complex, and the far detector located 810 km away at Ash River, detecting both survived muon and new appeared electron neutrinos. Both detectors have similar structure based on the liquid scintillator filling large volumes with detailed segmentation. The mass of the detectors target part is 14 ktons for the far detector and 220 tons for the near detector, providing to study wide astrophysical program beyond neutrino oscillation and neutrino cross-section measurements, search and detection for different signals from Space and the Earth's environment: supernova, magnetic monopole, atmospheric muons, dark matter and potential signals in coincidence with the LIGO/Virgo gravitational wave events.

Please choose the session this abstract belongs to

Particle physics

Primary author: SAMOYLOV, Oleg (Joint Institute for Nuclear Research)

Presenter: SAMOYLOV, Oleg (Joint Institute for Nuclear Research)

Session Classification: Session 4