



Contribution ID: 249

Type: Poster

Studying neutrinos at the high energy frontier with FASER ν at the LHC

FASER ν is a dedicated neutrino detector in the FASER experiment to study high-energy neutrinos from the LHC, which got approved by CERN in December 2019. A 1.2-tonnes emulsion-based detector will be located at 480 m downstream of the ATLAS interaction point. The unique experimental setup allows measuring three-flavor neutrino cross sections at the currently uncharted energy range between 350 GeV and 6 TeV. Furthermore, the channels associated with heavy quark (charm and beauty) production will be studied. FASER ν will take data in Run 3 of LHC operation (2021-2024), which would yield roughly 1300 ν_e , 20000 ν_μ , and 20 ν_τ interacting in the detector. The physics motivation, overview of the FASER ν project and the candidate neutrino events from the 30 kg neutrino detector in the 2018 pilot run (correcting 12.5 fb^{-1} of data) will be reported.

Mini-abstract

High energy neutrino experiment at the LHC. First neutrino interaction candidates from the 2018 run.

Experiment/Collaboration

FASER Collaboration

Primary author: Dr ARIGA, Akitaka (University of Bern)

Presenter: Dr ARIGA, Akitaka (University of Bern)

Session Classification: Poster Session 2