Contribution ID: **249** Type: **Poster**

Studying neutrinos at the high energy frontier with FASERν at the LHC

FASERν 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. FASERν 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 FASERν 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