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Neutrino results at TeV-energies from the LHC-FASER experiment

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The FASER experiment at the LHC aims to study neutrinos of all three flavors at TeV energies and search for new long-lived particles. The FASER detector, a 1-ton-scale emulsion-electronic hybrid neutrino detector, is located 480 m downstream of the ATLAS p-p interaction point, directly in the line of sight. Data taking began with the start of LHC Run 3 in 2022, and a total of 190 fb^{-1} of data has been collected. The first cross-section measurements of electron and muon neutrinos at around 1 TeV were reported in 2024. In this talk, we will present updated neutrino interaction rates, and interprettations in both neutrino cross section and hadron production at $\sqrt{s} = 13.6$ TeV. We will also discuss the future neutrino program of FASER and the Forward Physics Facility at the LHC.

Collaboration(s)

FASER

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