

High-energy neutrino measurements with FASERnu at the LHC

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FASER ν at the LHC is designed to directly detect collider neutrinos of all three flavors and provide new measurements of their cross-sections at energies higher than those detected from any previous artificial sources. In the pilot run data taken in 2018, we observed the first neutrino interaction candidates at the LHC, paving the way for studying neutrinos from high-energy colliders. In 2022-2025, during LHC Run 3, we expect to collect $\sim 2,000$ ν_e , $\sim 6,000$ ν_μ , and ~ 40 ν_τ charged-current interactions in FASER ν , along with neutral-current interactions. We installed the first physics run module into the tunnel in March 2022 and conducted the first exchange of the modules in July 2022. Here we present the latest results from FASER ν .

Primary author: ARIGA, Tomoko (Kyushu University (JP))

Presenter: Dr HAYAKAWA, Daiki (Chiba University (JP))

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