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High-energy neutrino measurements with FASERnu

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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 during LHC Run 2 in 2018, we observed the first neutrino interaction candidates at the LHC, opening a new avenue 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. In March 2022, we have installed the first physics run module into the tunnel. Here we present the physics potentials and status of FASER ν .

In-person participation

No

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