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# Overview of collider neutrinos

*Sunday, 30 November 2025 14:00 (25 minutes)*

Collider neutrinos open a new window into high-energy neutrino interactions and forward physics at hadron colliders. In this talk, I will first outline the motivation for studying collider neutrinos and introduce the LHC experiments FASER$\nu$ and SND@LHC. I will then discuss the production and detection of collider neutrinos, along with estimates of their fluxes and interaction rates at FASER\nu$. Recent experimental milestones—including the first observation of collider neutrinos, the first cross-section measurements, and the first flux determinations—will be highlighted. I will show how these results can constrain proton parton distribution functions and test hadronic interaction models relevant to astroparticle physics. Possible implications for physics beyond the Standard Model and prospects at future facilities such as the FCC-hh and muon colliders will also be briefly discussed.

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