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## FASER at the LHC: Collider Neutrinos and Searches for New Physics

*Friday, September 4, 2026 2:00 PM (25 minutes)*

The FASER experiment is located 480 m downstream of the ATLAS interaction point at the Large Hadron Collider (LHC), aligned with the beam collision axis. Shielded by approximately 100 meters of rock and concrete, FASER operates in an exceptionally low-background environment that enables unique studies of forward physics. The experiment's goals include two complementary physics programs: searches for light, weakly interacting beyond-the-Standard-Model particles and measurements of high-energy collider neutrinos.

Using proton–proton collision data collected during LHC Run 3 at  $\sqrt{s}$  13.6 TeV, FASER has produced exciting physics results in both areas. In neutrino physics, the experiment has opened a new energy regime through the detection and study of TeV-scale neutrinos produced at a particle collider. Recent results include neutrino interaction measurements with both the FASERv emulsion detector and the FASER electronic detector. In parallel, FASER has achieved world-leading sensitivity in searches for light, weakly interacting particles beyond the Standard Model.

In this talk, we will present the latest neutrino results obtained with the FASERv detector and the FASER electronic detector, together with an overview of recent beyond-the-Standard-Model searches and future prospects of the experiment.

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