

Operation and results of the FASERnu detector

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FASER, the ForwArd Search ExpeRiment, at the CERN LHC, is designed to search for new, light, weakly-interacting particles, and investigate high-energy collider neutrino interactions in the TeV regime, extending current cross-section measurements. Located 480 m downstream from the ATLAS IP, it is aligned with the collision axis line-of-sight, covering a previously unexplored pseudorapidity range of $\eta > 8.8$. In March 2023, the FASER collaboration announced the first direct observation of neutrino interactions at a particle collider experiment using the active electronic components of the FASER detector. FASER is composed of a main electronic detector, sitting behind the passive FASER ν neutrino detector, made up of 730 alternating emulsion films and tungsten plates, resulting in a 1.1 tonne target mass. The FASER ν detector achieves sub-micron position resolution, allowing for all three neutrino flavours to be distinguished by their vertex topology in CC interactions. Due to the track occupancy in emulsion, three data-taking periods are carried out per year, each module requiring assembly and development campaigns. FASER plans to run throughout the LHC Run3, collecting 250 fb^{-1} of data. In this presentation, recent FASER results, as well as the status of data taking and analysis for FASER ν , will be presented.

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