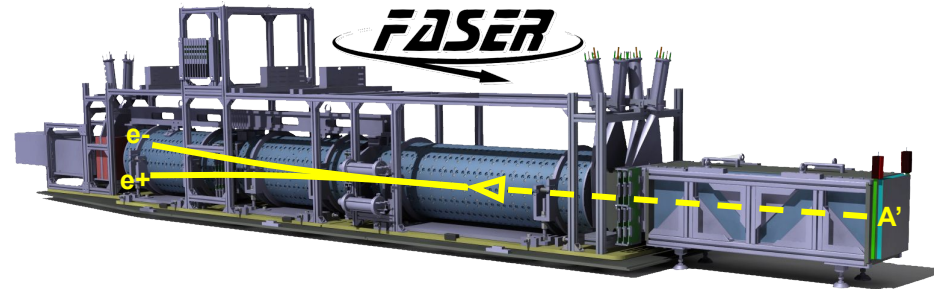


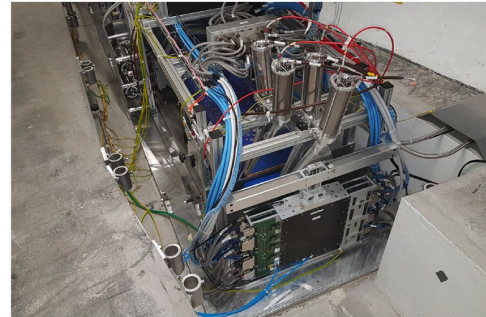
The Tracking Detector of the FASER Experiment

Abstract

FASER is a new experiment designed to search for new light weakly-interacting long-lived particles (LLPs) and study high-energy neutrino interactions in the very forward region of the LHC collisions at CERN. The experimental apparatus is situated 480 m downstream of the ATLAS interaction-point aligned with the beam collision axis. The FASER detector includes four identical tracker stations constructed from silicon microstrip detectors. Three of the tracker stations form a tracking spectrometer, and enable FASER to detect the decay products of LLPs decaying inside the apparatus, whereas the fourth station is used for the neutrino analysis. The spectrometer has been installed in the LHC complex since March 2021, and the fourth station was installed in November 2021. FASER will start physics data taking when the LHC resumes operation in early 2022. This poster describes the design, construction and testing of the tracking spectrometer, including the associated components such as the mechanics, readout electronics, power supplies and cooling system.



(Above) Model of the **FASER detector** assembled in T112



(Left) **Interface Tracker (IFT)** installed in T112 prior to the installation of the FASERnu calorimeter, in front of the veto station.

Current Status

Installed in T112 tunnel, taking data. First splashes seen April 2022. Tracker paper is in-prepress for Nucl. Instrum. Methods Phys. Res. A