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First FASER Physics Results

Tuesday, May 16, 2023 2:55 PM (25 minutes)

This talk will present the first physics results of the FASER experiment, where we were the first to directly observe neutrino interactions at a particle collider experiment and also probed previously unconstrained phase space of the dark photon with couplings 10^{-5}—10^{-4} and masses ~10 MeV - 100 MeV. FASER is an experiment dedicated to searching for light, extremely weakly-interacting particles that are produced in the very forward direction of high-energy pp collisions at CERN's Large Hadron Collider (LHC). The detector is placed 480 m downstream of the ATLAS interaction point, aligned with the beam collisions axis, and consists of both active electronic components intended to search for BSM physics and a passive tungsten emulsion target intended for neutrino physics. The results presented in this talk were obtained using a dataset collected at center-of-mass energy $\sqrt{s}$=13.6 TeV in 2022 during LHC Run 3.

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