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New Physics Searches with the FASER Experiment

Abstract

The FASER detector is located 480 m from the ATLAS interaction point and along its collision axis. Thanks to its unique location, the experiment has been performing near background-free far-forward searches for DM candidates, since its start of operations in 2022. In 2023, FASER performed the first ever direct observation of collider neutrinos. Recent studies provided exclusion regions for Dark Photon and Axion-Like Particle models.

With a high-precision preshower detector upgrade scheduled in the upcoming months and approval to operate during Run 4, the FASER Collaboration is looking forward to more upcoming exciting studies.