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SND@LHC: Recent results and future prospects

Wednesday 15 May 2024 17:00 (15 minutes)

SND@LHC is a compact stand-alone experiment to perform measurements with neutrinos produced at the LHC in a hitherto unexplored pseudo-rapidity region of 7.2 < 𝜂 < 8.6, complementary to all the other experiments at the LHC. The experiment is located 480 m downstream of IP1 in the unused TI18 tunnel. The detector is composed of a hybrid system based on an 800 kg target mass of tungsten plates, interleaved with emulsion and electronic trackers, followed downstream by a calorimeter and a muon system. The configuration allows efficiently distinguishing between all three neutrino flavours, opening a unique opportunity to probe physics of heavy flavour production at the LHC in the region that is not accessible to ATLAS, CMS and LHCb. This region is of particular interest also for future circular colliders and for predictions of very high-energy atmospheric neutrinos. The detector concept is also well suited to searching for Feebly Interacting Particles via signatures of scattering in the detector target. The first phase aims at operating the detector throughout LHC Run 3 to collect a total of 290 fb^{-1}. The experiment has been running successfully during 2022 and 2023 and has published several results.
This talk will highlight recent results and discuss prospects for the High-Luminosity LHC era, at the proposed Forward Physics Facility or in the current location.

Mini Symposia (Invited Talks Only)

Plenary (Invited talks only)

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