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Measurement of Collider Neutrinos with the SND@LHC Experiment

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Neutrinos are produced abundantly at colliders, still collider neutrinos have yet to be detected. The LHC will deliver the highest energies yet of man-made neutrinos, and their detection will be a milestone. This will be achieved at the SND@LHC experiment, which is located 480 meters away from the ATLAS interaction point, near the beam line direction.

The experiment is up and running for the duration of Run3 of the LHC, and features technology from LIP in the Muon Detector system. However, it was assembled last year with a very tight schedule and is currently in the process of commissioning. Due to the aforementioned connection to LIP, the Muon System commissioning is of high interest, and we are currently performing timing corrections in order to meet the stringent timing requirements in order to detect neutrinos. The experiment will be followed throughout, with participation in data taking and analysis towards the first ever observation of collider muon neutrinos, with energies of over 100 GeV.

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