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## **【360】 Neutrino interaction classification in SND@LHC based on Graph Neural Network**

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The SND@LHC is a compact experiment that aims to observe and measure high flux of energetic neutrinos of all flavours from the LHC. Identifying neutrino interaction against the large background from neutral hadrons and muons is one of the main challenges. Current identification methods are based on reconstructing muon tracks and hit multiplicity, and only consider events that are in a fiducial region of the target. We investigate the use of Graph Neural Network (GNN), where each hit is considered as a node and their relation can be learned as edge feature, to the specific use case of neutrino interaction classification with only electronic data. We evaluated our End-to-End classification method using simulated events, and the performance of identifying muon neutrinos and electron neutrinos is promising.

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