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Hyperon searches with the Short-Baseline Near Detector

venerdì 21 giugno 2024 17:30 (2 ore)

The Short-Baseline Near Detector (SBND) at Fermilab is a Liquid Argon Time Projection Chamber (LArTPC) experiment designed to capture neutrinos from the Booster Neutrino Beam (BNB). Its proximity to the beam target (110 m) and large size (112 tons) enable the recording of millions of neutrino interactions annually. SBND provides the highest statistics worldwide for neutrino-argon cross-section measurements, facilitating the study of rare channels like Cabibbo-suppressed QE hyperon production. Specifically, this poster focuses on neutral Λ baryon production. Our work introduces a novel selection strategy leveraging LArTPC imaging capabilities to identify the distinctive decay signatures of Λ baryons, enhancing sensitivity to this channel.

Poster prize

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