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ENUBET and SBN@CERN proposal

Thursday 10 July 2025 12:00 (30 minutes)

The poor knowledge of neutrino cross sections at the sub-GeV scale will represent the main systematic uncertainty for the next-generation oscillation experiments. SBN@CERN is a proposal for a short baseline neutrino beam with proper instrumentation along the beamline and in the decay tunnel, based on ENUBET and NuTag projects, which will enable flux monitoring at the percent level and provide a neutrino energy determination independent of final state particle reconstruction at the neutrino detector. As a result, it eliminates the two primary sources of systematic uncertainty in cross-section measurements: flux normalization and energy bias caused by nuclear effects. This talk will focus on the ENUBET project and how it came to be a part of SBN@CERN proposal. It will also show the physics potential of the full proposed SBN@CERN facility for the cross-section measurement.

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