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ENUBET: a monitored narrow-band neutrino beam

The ENUBET experiment is developing a new neutrino beam based on conventional techniques in which the flux and the flavor composition are known with unprecedented precision (O(1%)). Such a goal is accomplished monitoring the associated charged leptons produced in the decay region of the ENUBET facility. Positrons and muons from kaon decays are measured by a segmented calorimeter instrumenting the walls of the decay tunnel, while muon stations after the hadron dump can be used to monitor the neutrino component from pion decays.
This poster will describe the options under study for the meson transfer line: a static (quadrupole-based) focusing of mesons coupled to a slow proton extraction scheme and a horn based focusing system associated to a new bursted slow extraction.
The protoyping and testing activity on the facility instrumentation will be reported together with a full simulation of the lepton reconstruction chain in the decay tunnel.

Mini-abstract

A new narrow-band neutrino beam for high precision cross section measurement in the DUNE/Hyper-K era

Experiment/Collaboration

ENUBET Collaboration

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