



ENUBET

PS/SPS user meeting 5 Sep 2018

- Aim of the testbeam
- Installation
- Plans until Sep 19



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This project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement No 681647).

Goals of the test

ENUBET (Neutrino Platform, NP03-Plafond): design a new generation of neutrino beams with superior control of the flux at source. Instrumentation of the decay tunnel to monitor positron production from three body decay of the kaon ($K^+ \rightarrow \pi^0 e^+ \nu_e$) \Rightarrow **calorimeter** for positron identification and energy measurement, **photon veto**

2017 Tests of shashlik calorimeter with embedded SiPM:

Pro: compactness, physics performance OK for 4.3 X0 sampling

Cons: radiation hardness of the SiPM is OK for the aim of ENUBET 10^{11} n/cm² but no large safety margins

Several prototypes for the calorimeter and the photon veto

2018 Tests of calorimeter with lateral readout (EJ-204+BCF92)

Pro: no constraints from SiPM irradiation

Cons: mechanics and installation more complicated

Performance for electron and mip?

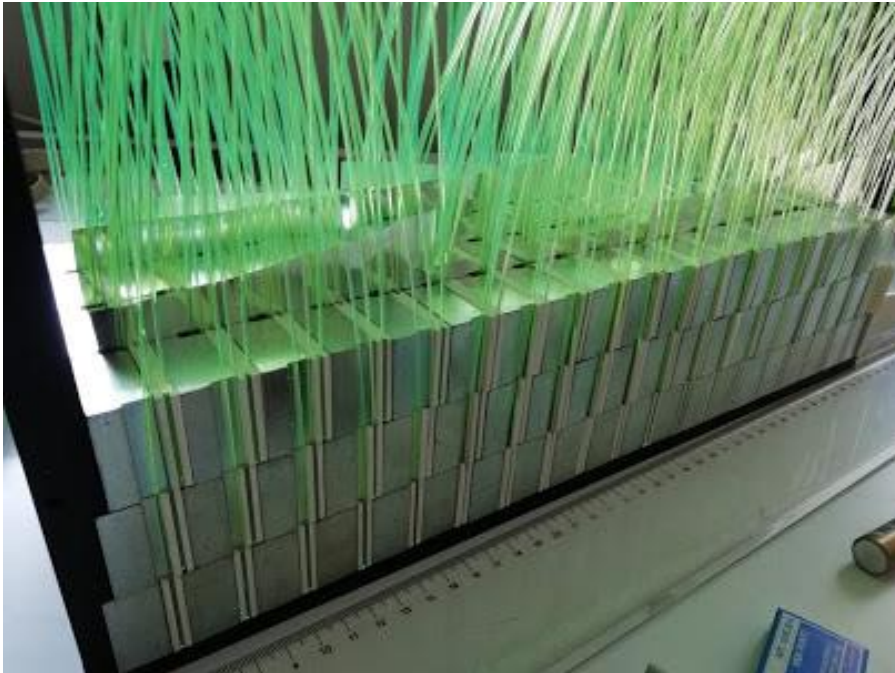
Successfully tested in May

[May 2018]

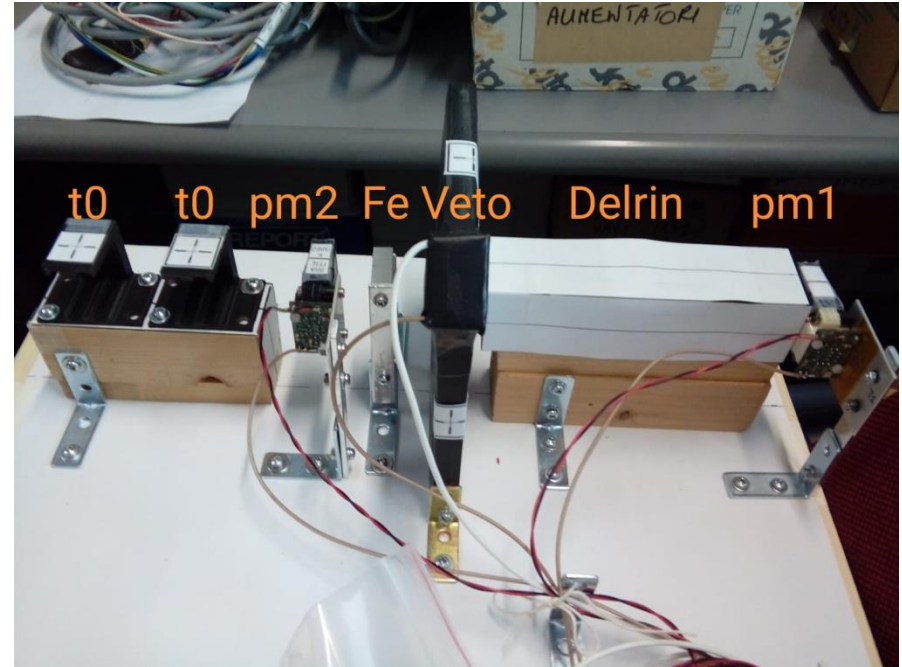
Large size calorimeter for complete test of e/ π separation

Test of the photon veto and combined veto+calo

[Sep 2018]



1 of the 4 modules



Setup for the test of photon veto

Installation

- Calorimeter + photon veto: Delivered at CERN on Tuesday
- Two Cherenkovs: CO₂ (already employed by previous users)
- DESY table: already on-site. To be moved in the experimental area and connected

Safety clearance requested for Thursday afternoon
(but may be issues with holydays at CERN)

Plans and requests

10 days: full characterization of the prototype with lateral light readout. Run at different energies (1-5 GeV). Test of the photon veto

5 days: test at different angles

we would like to use the electron enriched target