

# ENUBET



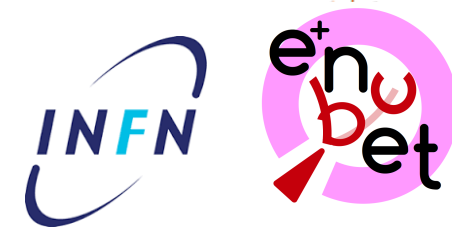
PS/SPS user meeting  
CERN, 16 May 2018



**A. Longhin (Univ. Padova & INFN)**

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).

# ENUBET



ENUBET Enhanced NeUtrino BEams from kaon Tagging  
(ERC-CoG 2015, 2016-2021)

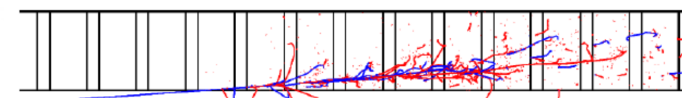
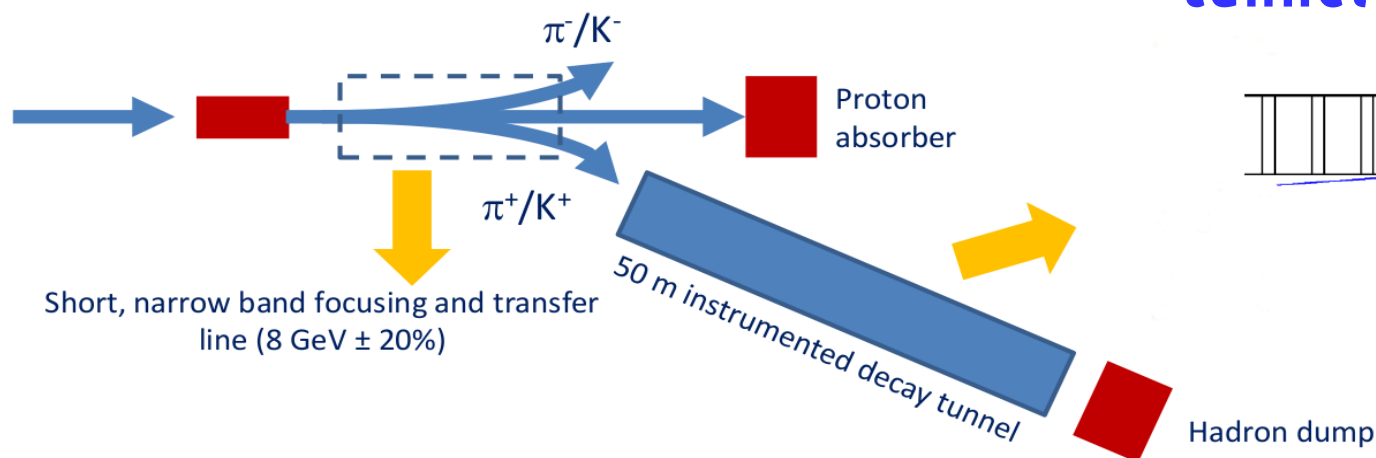
SPSC-EOI-014

Oct 2016

- Instrumented decay tunnel
- $K^+ \rightarrow e^+ \nu_e \pi^0 \rightarrow$  large angle  $e^+$
- $\nu_e$  flux prediction =  $e^+$  counting
- Percent level precision

1) Design of the hadron beamline

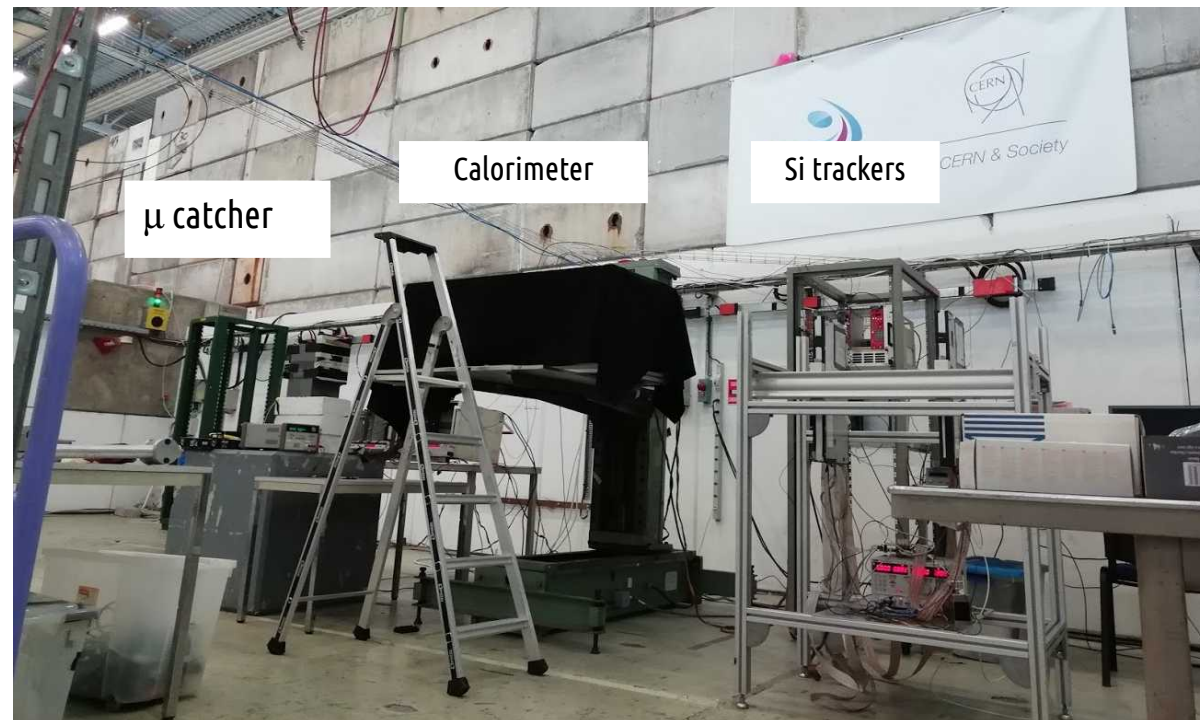
2) R&D for the instrumentation of the decay tunnel (shashlik calorimeters)



# Operations in T9

- **09-10 May:** installation and commissioning. Smooth.
- Services:
  - 1 DESY table
  - Cherenkov counters with CO<sub>2</sub>
  - **Minor problem** with the upstream chamber (chA): CO<sub>2</sub> input valve in the back panel was closed (looked like open but was turned by 180°). Thanks to Lau and Abu for help!

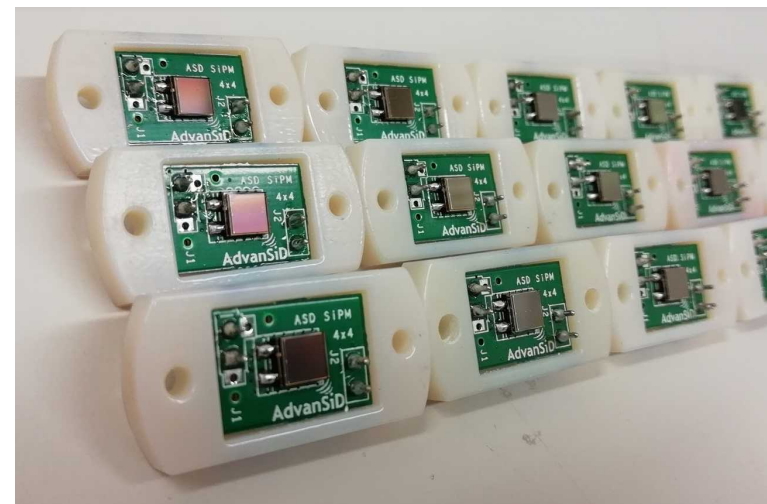
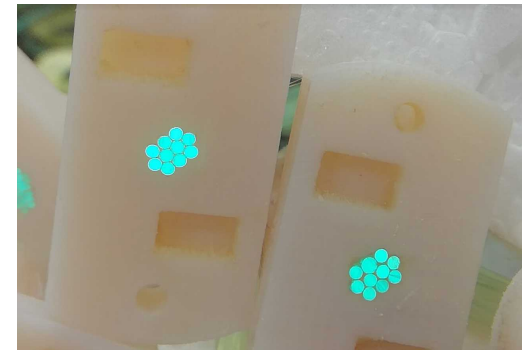
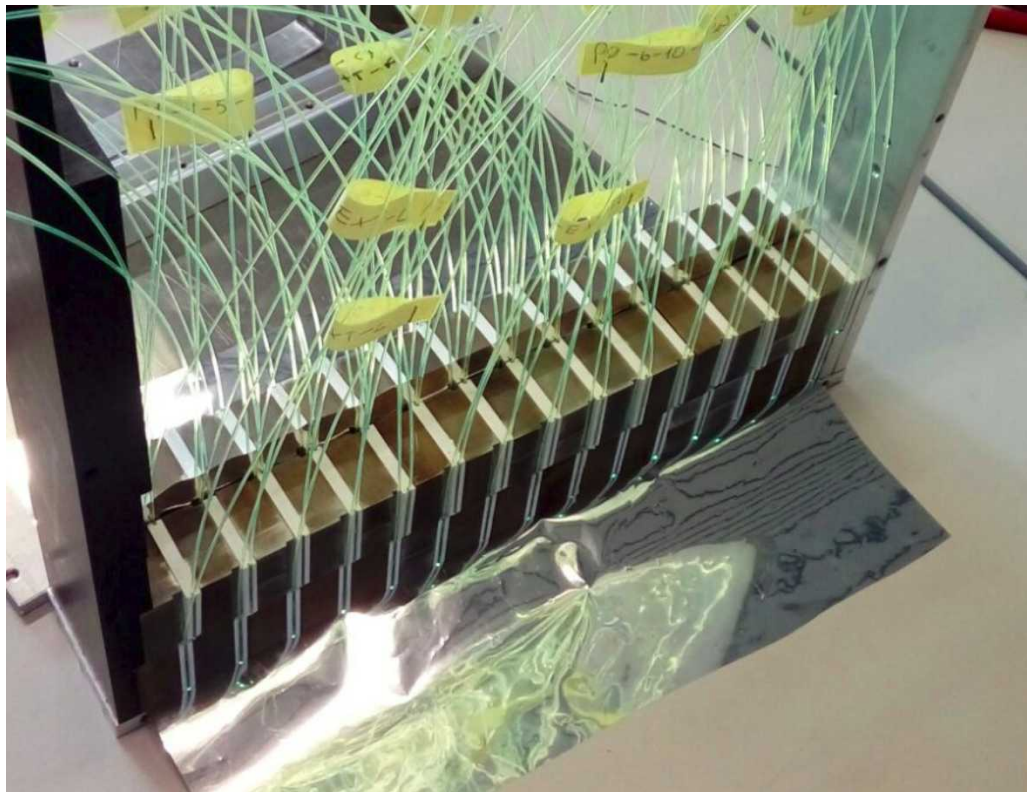
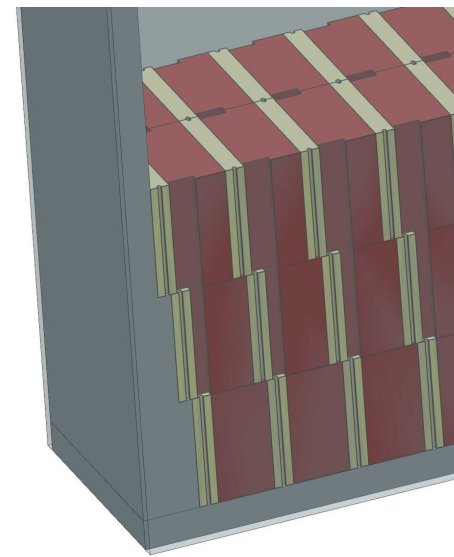
- **09** afternoon: safety visit (HV)
- **11** morning: final safety visit
- Beam operations: smooth



# Calorimeter prototype

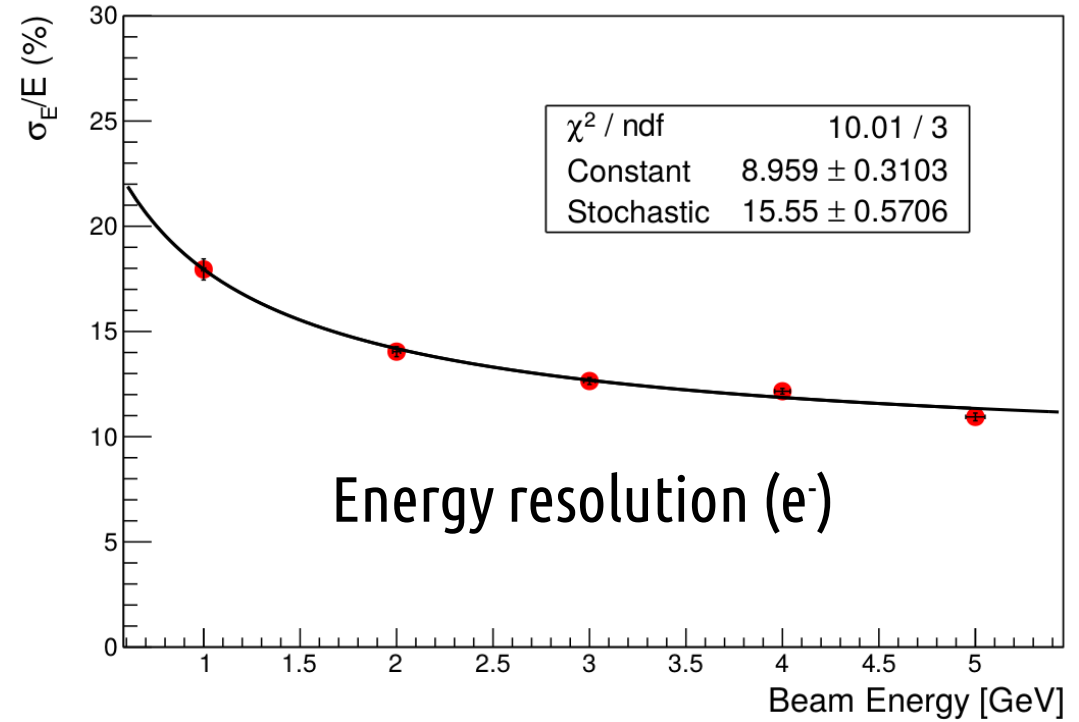
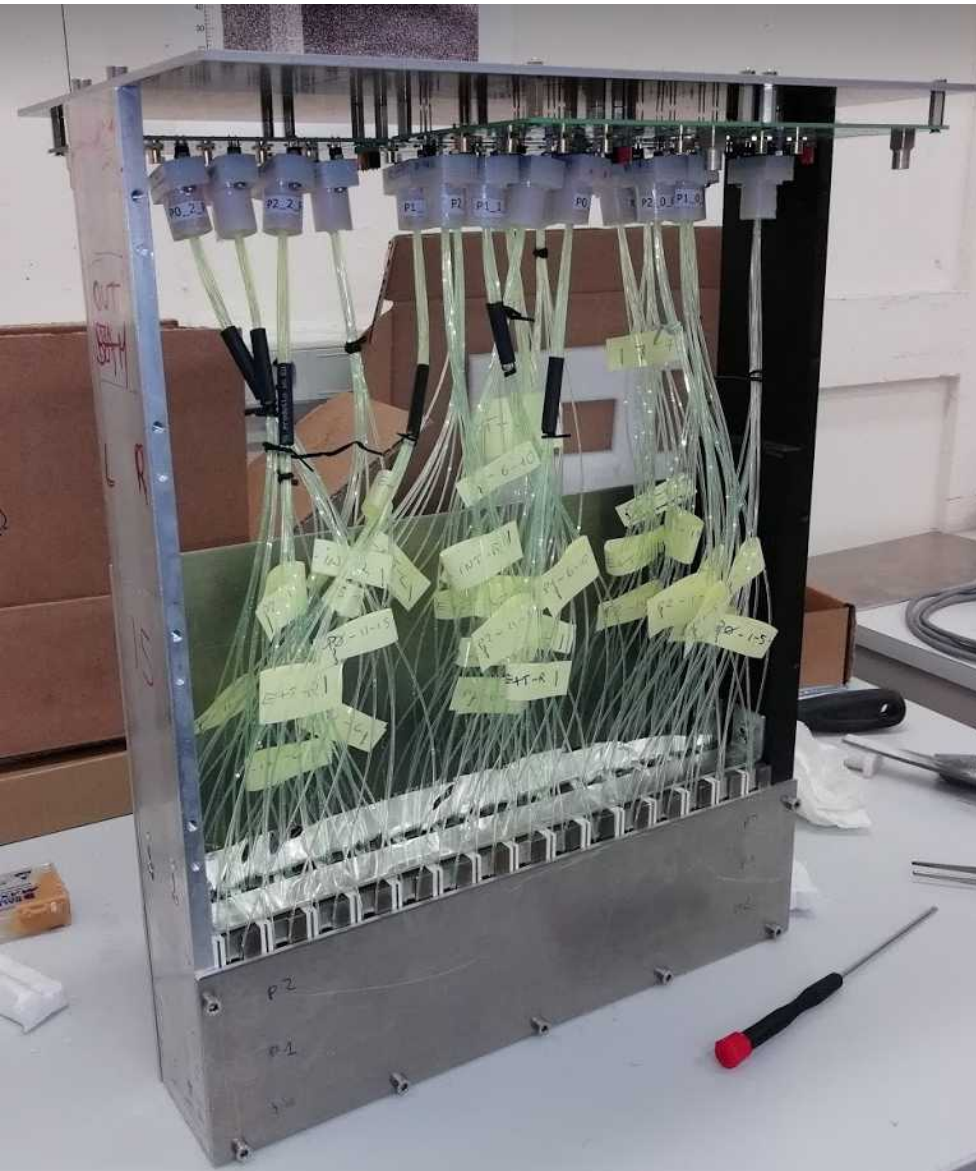


Sampling calorimeter (15 mm iron + 5 mm EJ204 tiles) with lateral WLS light collection. Test of Light yield, uniformity, resolution, optical coupling to photosensors (FBK Advansid 3x3 mm<sup>2</sup>)

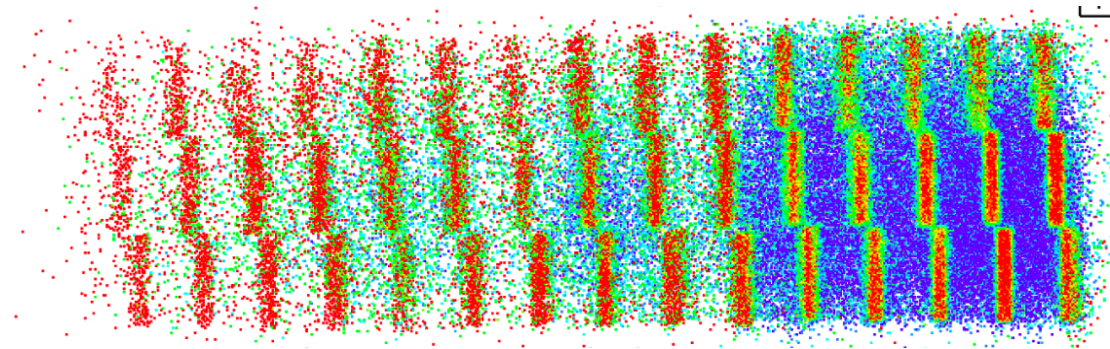


# Fresh results

- Calorimeter with lateral light readout

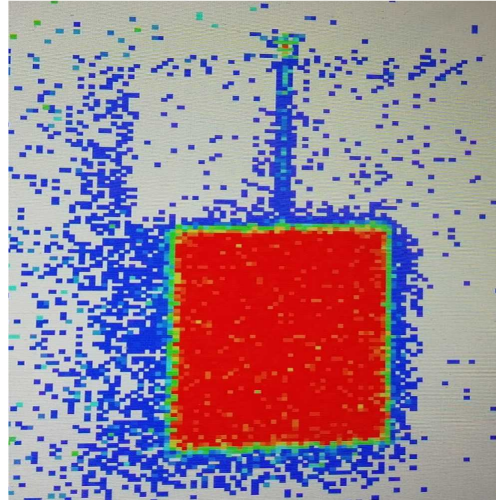


Uniformity, light yield

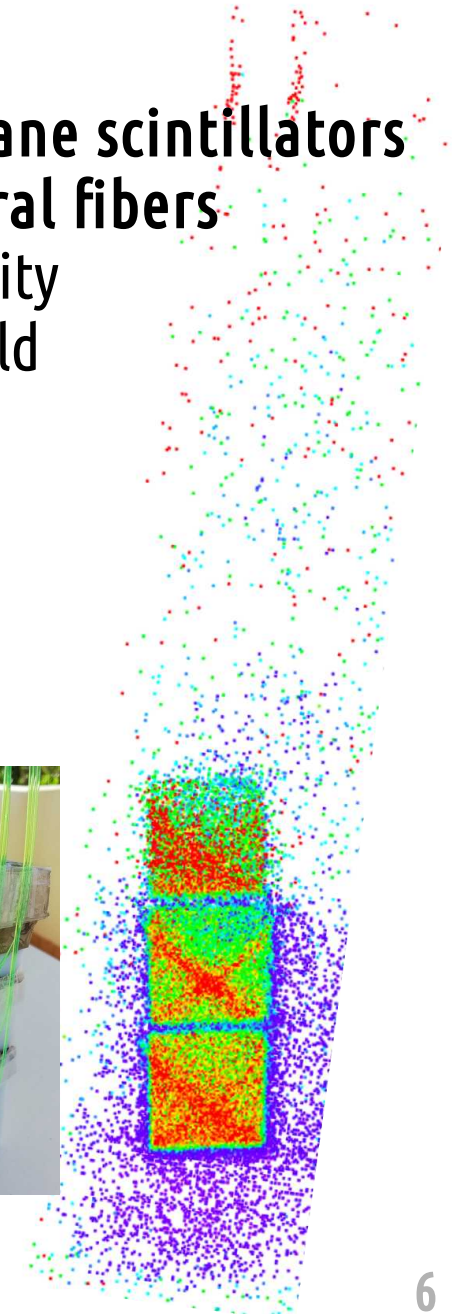


# Fresh results

- $t_0$ -layer prototypes
  - Uniformity
  - light yield
  - time resolution



- Polysiloxane scintillators with lateral fibers
  - Uniformity
  - light yield



# Schedule

- We plan to take data until next Wednesday. Further tests:
  - 1 mip-2mip separation with  $t_0$ -layers
  - Linearity at high energy using an electron trigger
  - photoelectron yields of prototypes using photon counting
  - Tests with different frontend electronics
- Thanks for stable beams and support!

