



Short report from the meeting of the PBC accelerator sub-WG  
on conventional beam lines

11 december 2017

**μ-on-e** status and plans

# Outline

*This is a meeting of muon users:*

**Plans for 2018 and tentative future plans  
from:**

★  $\mu$ -on-e

★ NA64

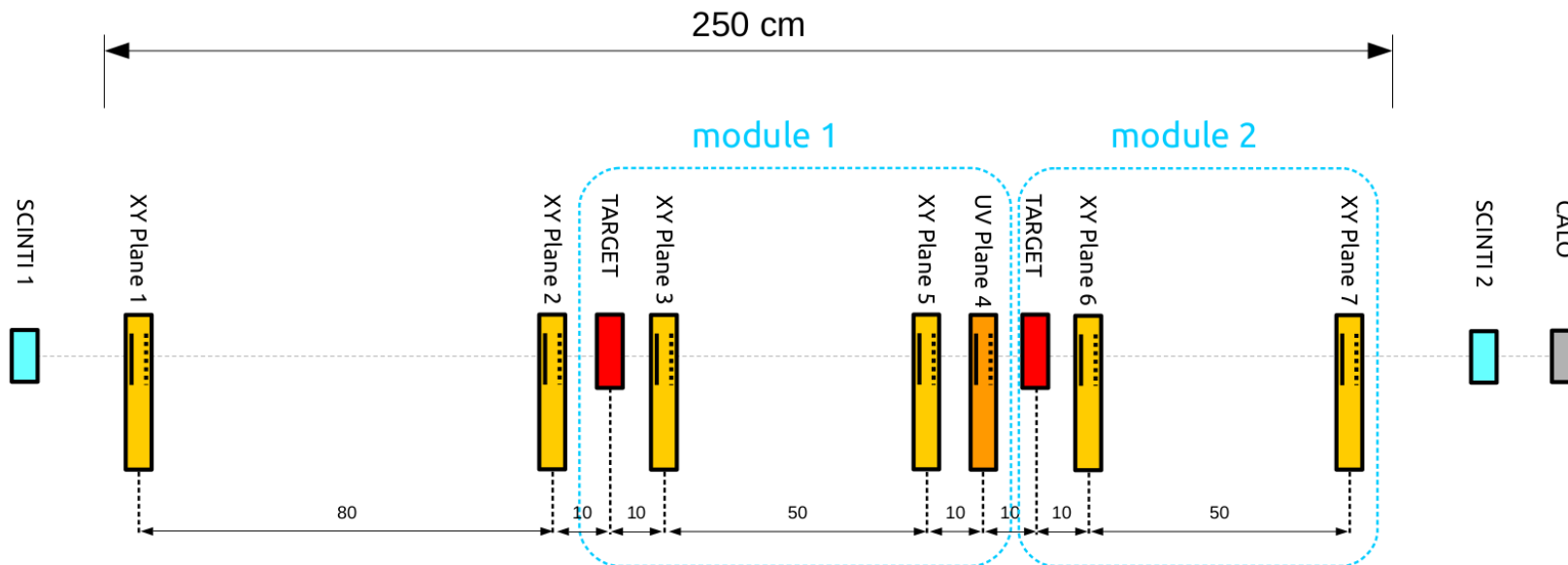
★ COMPASS

# $\mu$ -on- $e$ Test activity in 2018

We will take data with muon beams

- We will use the setup being prepared from Erik+Michela group (they are producing and testing the missing el cards, preparing the mechanics, etc...)

**Basic:** 7 Si planes 95x95 mm<sup>2</sup>, 2 in front to measure incoming muon direction



# $\mu$ -on-e Test activity in 2018

We requested also 1 week (**10 -17 October 2018**) of high energy muon beam (160 GeV) in H8 (A138)  
(*optimization of this beam started*)

*Main aim of the 2018 test activities:*

➔ *study of a possible final apparatus*

*use of calorimeter*

*study of event multiplicity*

*localization of the interaction vertex*

.....

➔ *look for elastic events*

➔ *others....*

## **Request of M2 with the following characteristics:**

**high intensity (  $10^8$   $\mu$ 's/spill**

**highest energy ( $\sim 160$  GeV)**

**beam in a 'parallel' configuration**

*(will be studied by beams experts, for ex.: focalizing the beam behind our detector)*

**measure incoming  $\mu$  with BPM of COMPASS**

**Mount whatever part of the final detector will be available**

# Status of NA64 plans

## → NA64 requests “M2” beam for >2020

high purity mu beam

(NA64 measured  $\pi, K/\mu \approx 10 \times 10^{-5}$  )

plan to use the BMS

studies the possible integration of their apparatus

inside COMPASS (*for all the 3 suggestions from Johannes B.)  
using some parts of the COMPASS detector*)

## → **For 2018 :**

***NA64 didn't yet come forward with a precise request.  
Will do it after some simulations on the intensity and  
energy of the muons behind COMPASS***

# Status of COMPASS plans

➔ **COMPASS will request “M2” beam for >2020**  
for measuring proton radius

**will request hadron for other physics measurements**

***For 2018 :***

➔ **COMPASS has asked hadron beams, but will use muons**  
*for alignment and calibration (M2 ‘modified’)*

**$\mu$ 's will be run once per 1 - 2 weeks**

*(beam experts will simulate momentum and spatial distribution  
of muons behind COMPASS)*

# Summary

## ★ Quite a lot of work planned in 2018

### On C. Vallee request :

**we must prepare for end 2018 a study of feasibility and cost of the infrastructure for housing the final apparatus behind COMPASS**

*(this will be done with the support of the responsables of the WA)*

★ **For > 2020 we must keep in contact with NA64 and their beam requests** *(they will not be necessarily uniform with ours...)*



**Backup**