

Front Tracker Status

E. Cisbani / RM / R

SBS Weekly Meeting

2015 Sep 23

BA=Bari
CT=Catania
GE=Genova
LE=Lecce
RM=Roma-ISS

E=Engineer
P=PhD Student
R=Researcher
S=Student
T=Technician

E. Bellini / CT / R
S. Colilli / RM / T
F. Giuliani / RM / T
A. Grimaldi / CT / T
F. Librizzi / CT / R+T
M. Lucentini / RM / T

P. Musico / GE / E
R. Perrino / BA+LE / R
L. Re / CT / S
F. Santavenere / RM / T
D. Sciliberto / CT / T
C. Sutura / CT / R

Delta from previous report

Module assembling

- 2 modules gas leaks fixed, and HV trained in N2
- UVa test window collapsing

Chamber integration

- Work on carbon fiber external frame; integration details defined and integration procedure almost completed

Cosmic Setup

- Added small scintillator plate and small reference GEM chamber to the cosmic stand
- Improved trigger and DAQ

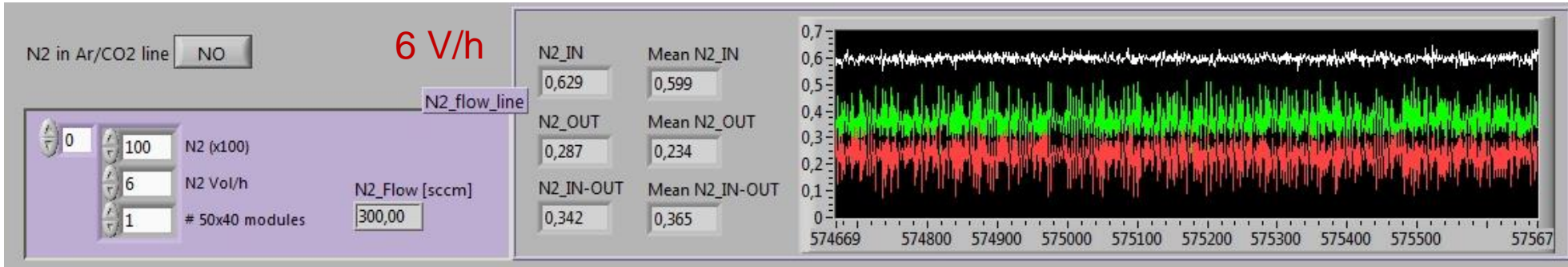
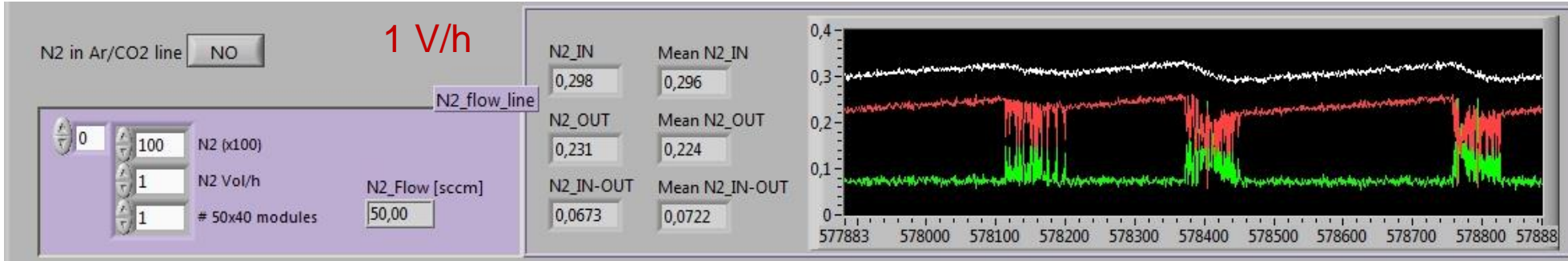
Electronics/DAQ

- MPD-Fiber optics-SSP work in progress
- CODA-MPD progress (with Danning and Alexandre)

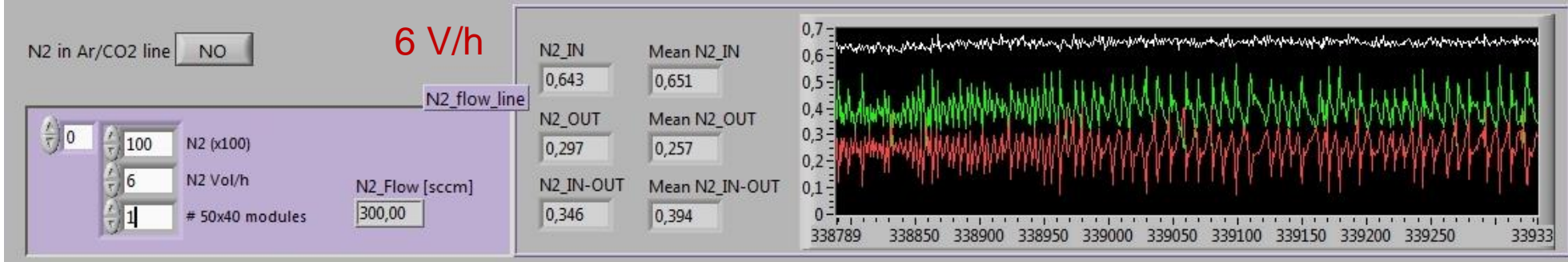
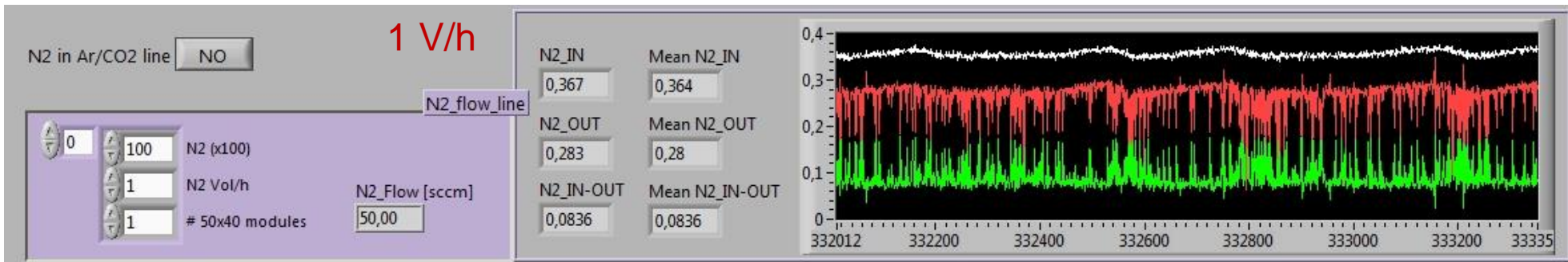
M4 and M5 - Gas Test Passed

White: IN pressure
 Red: OUT pressure
 Green: Delta pressure

Module 4



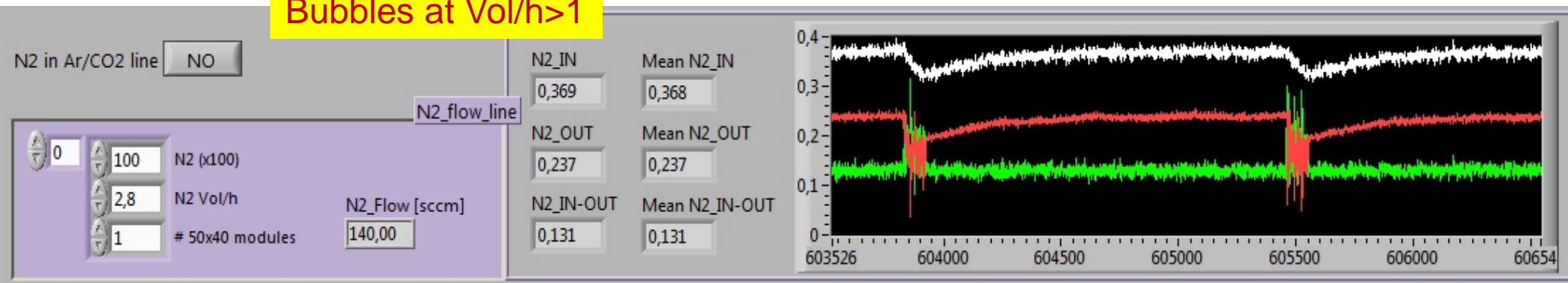
Module 5



M3 - Gas Test Failed

White: IN pressure
Read: OUT pressure
Green: Delta pressure

Bubbles at Vol/h>1

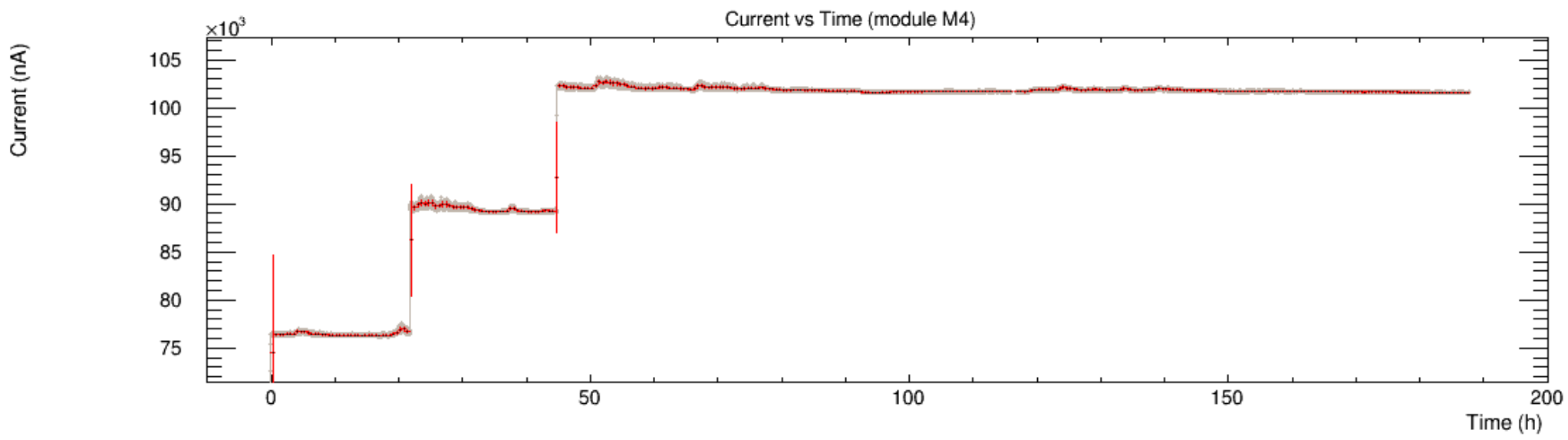
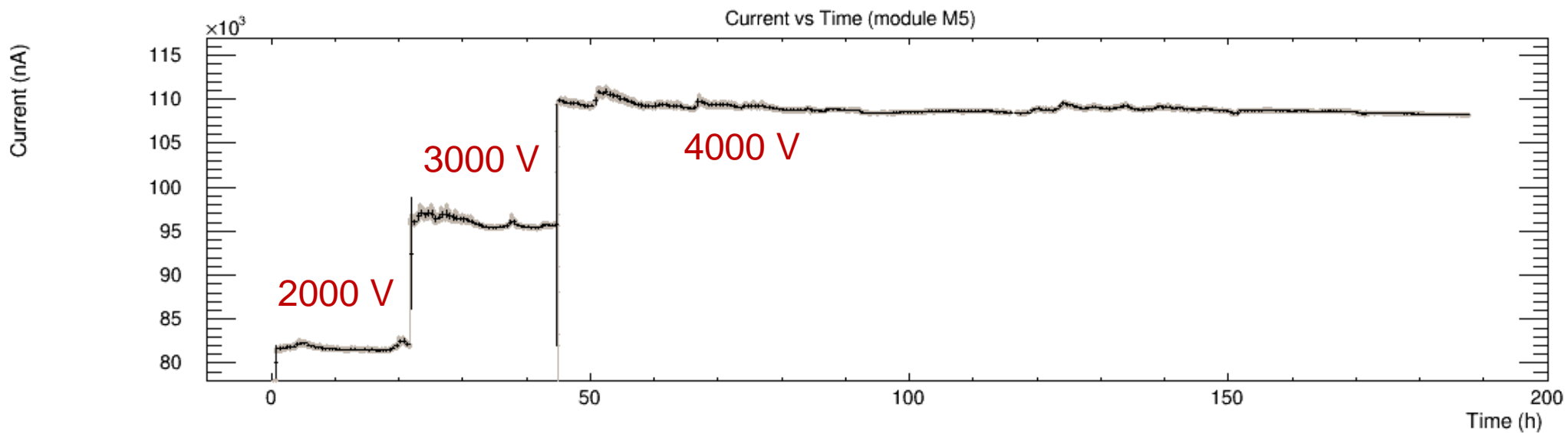


1. Survey by means of a gas sniffer; if major leak try to fix immediately
2. If nothing relevant deposit a glue «ring» all around the mylar window(s)
3. If still fail deposit a glue «belt» all around the module sides (to be done for Module 3)



(currently using araldite 9011)

M4 and M5 HV training (in N2)



Window collapsing / UVa Studies

Dear Evaristo,

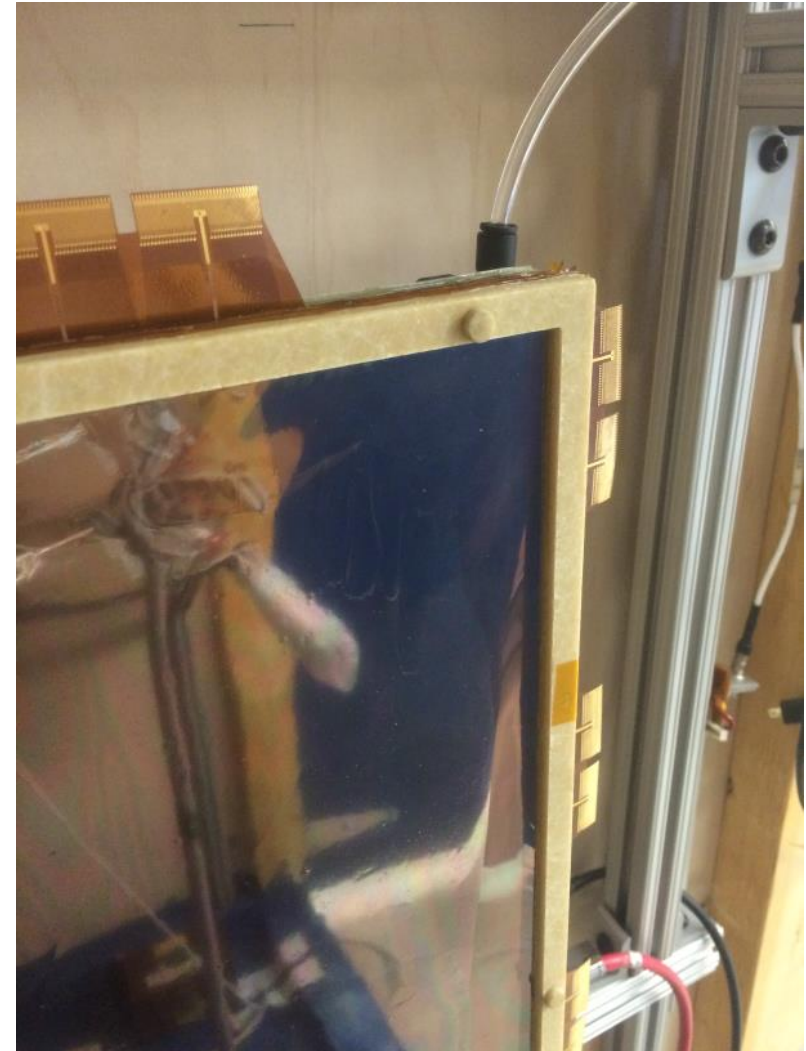
Kondo email

We have seen the same gas window collapsing problem with your chamber under high rate x-ray exposure as you can see on the attached pics (the picture are not very clear, I would try t get some better views) .

The collapse does not happen at high flow rate when the pressure lead to visible bump of the gas window which I estimate to be about 6 to 8 volume changes / hour) , **but with at a lower flow rate (estimate 3 volume changes / h), the collapsing happen after about 4 to 5 hours.**

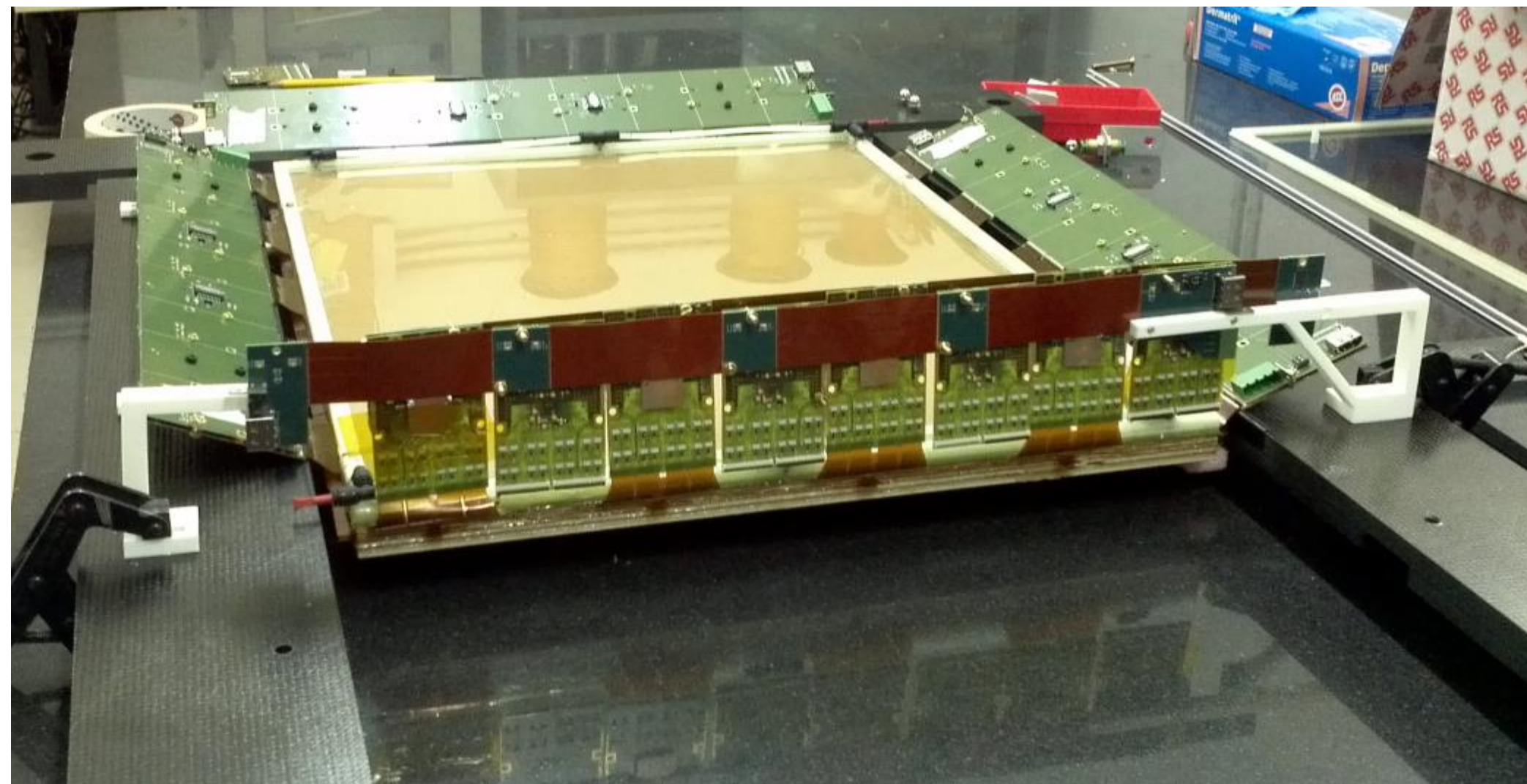
This is very similar to what we are seeing in the back tracker GEMs Best regards Kondo

We are in the process to change the window material (at the moment we are in stand-by) from mylar to some sort of aluminized mylar or kapton;
Planning some additional tests in Genoa on a Xray intense irradiator



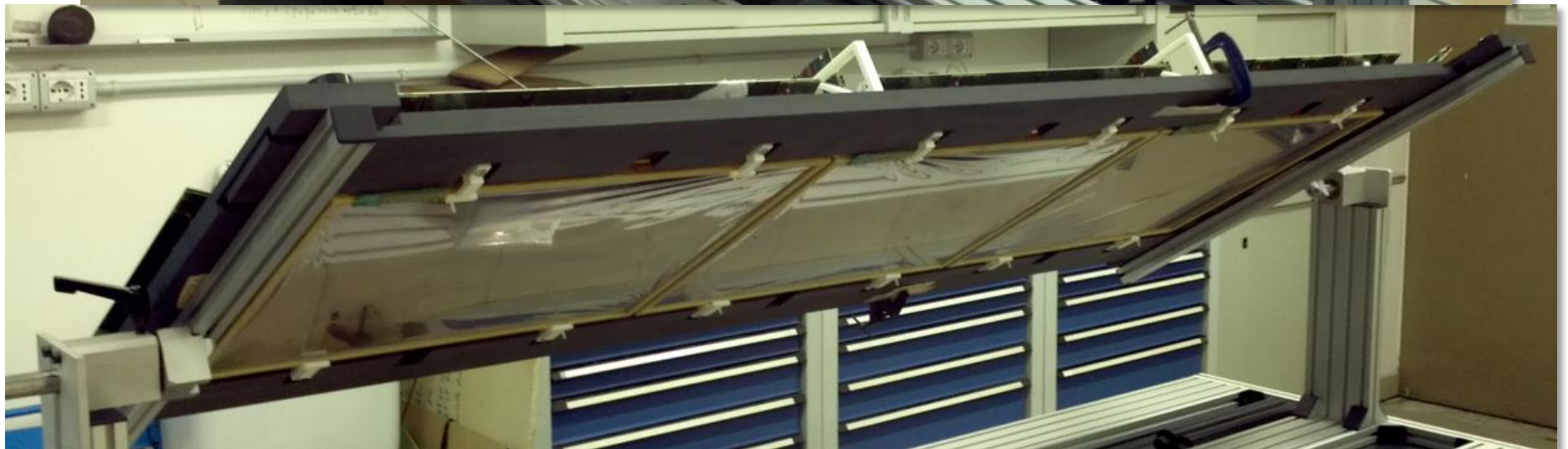
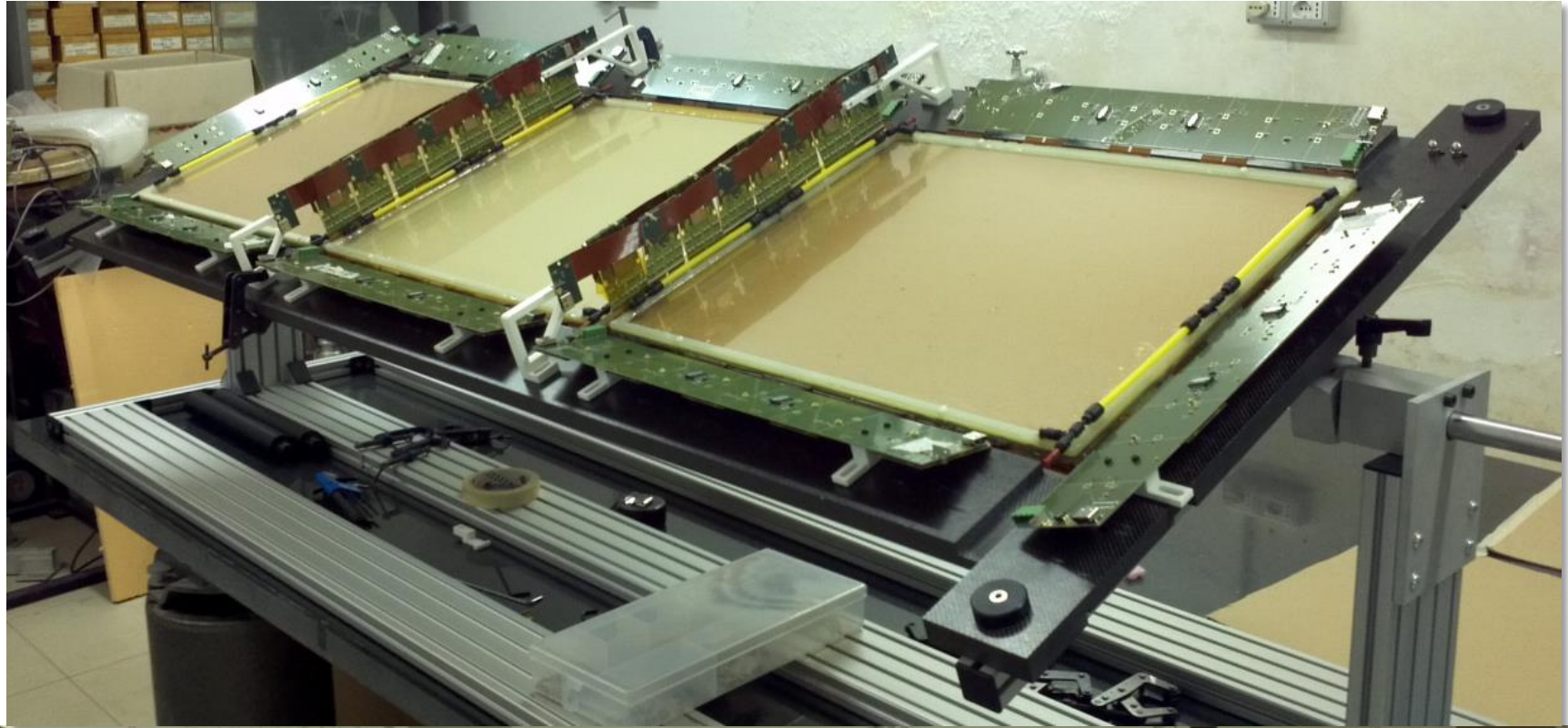
Most lilely the tested chamber has some significant leak (due to oversees transportation) that reduce the inner pressure at the given gas flow

Module in Carbon Frame Frame



- Bottom chamber aligned with the bottom side of the carbon frame
- Electronics at about 30 degree (relative to horizontal)

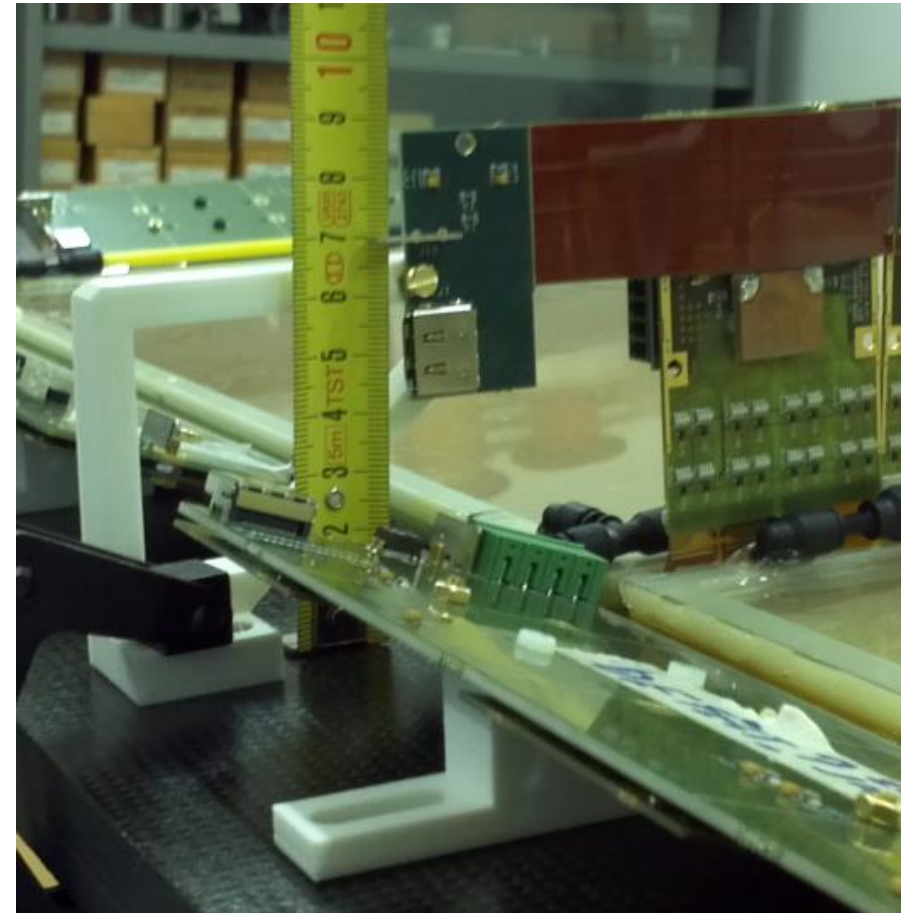
Chamber on Carbon Fiber Frame



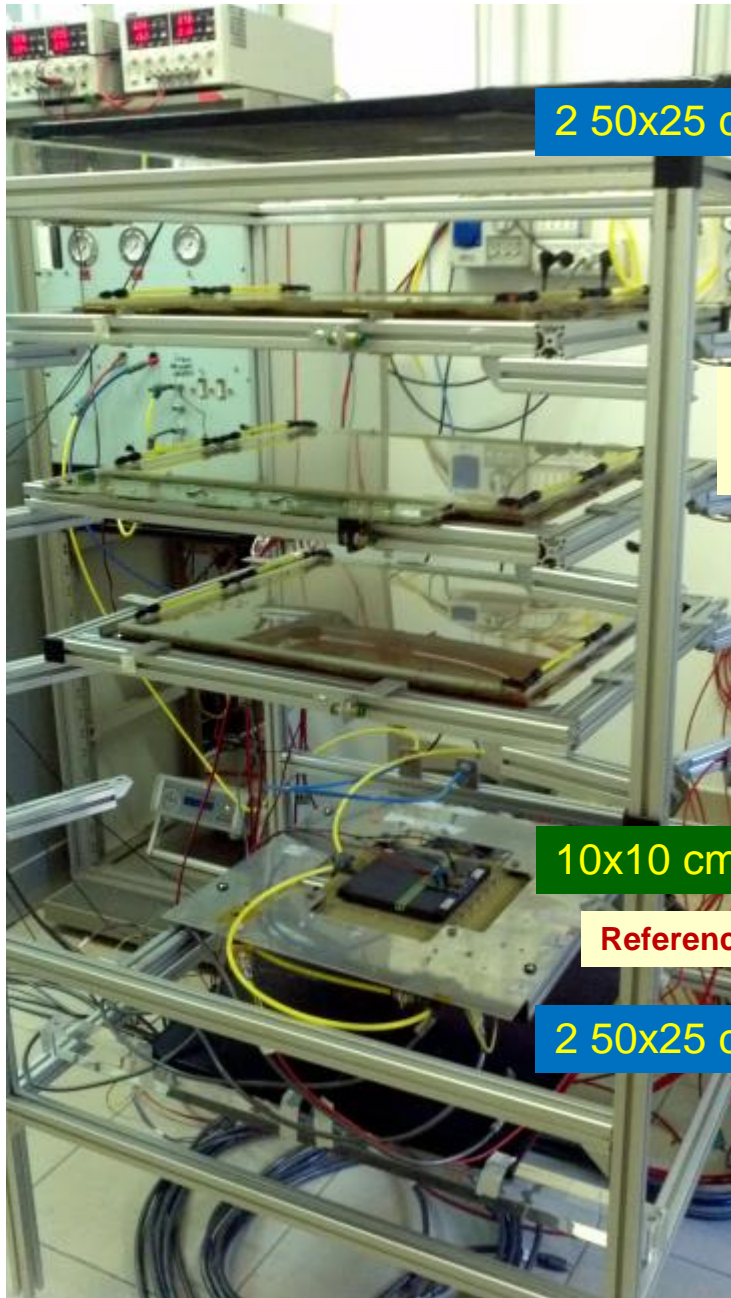
Chamber Details



- **Total (effective) height < 12 cm**
- **Local HDMI cables can be 2 m long (instead of original 3)**



Improved Cosmic Test Trigger and Ref



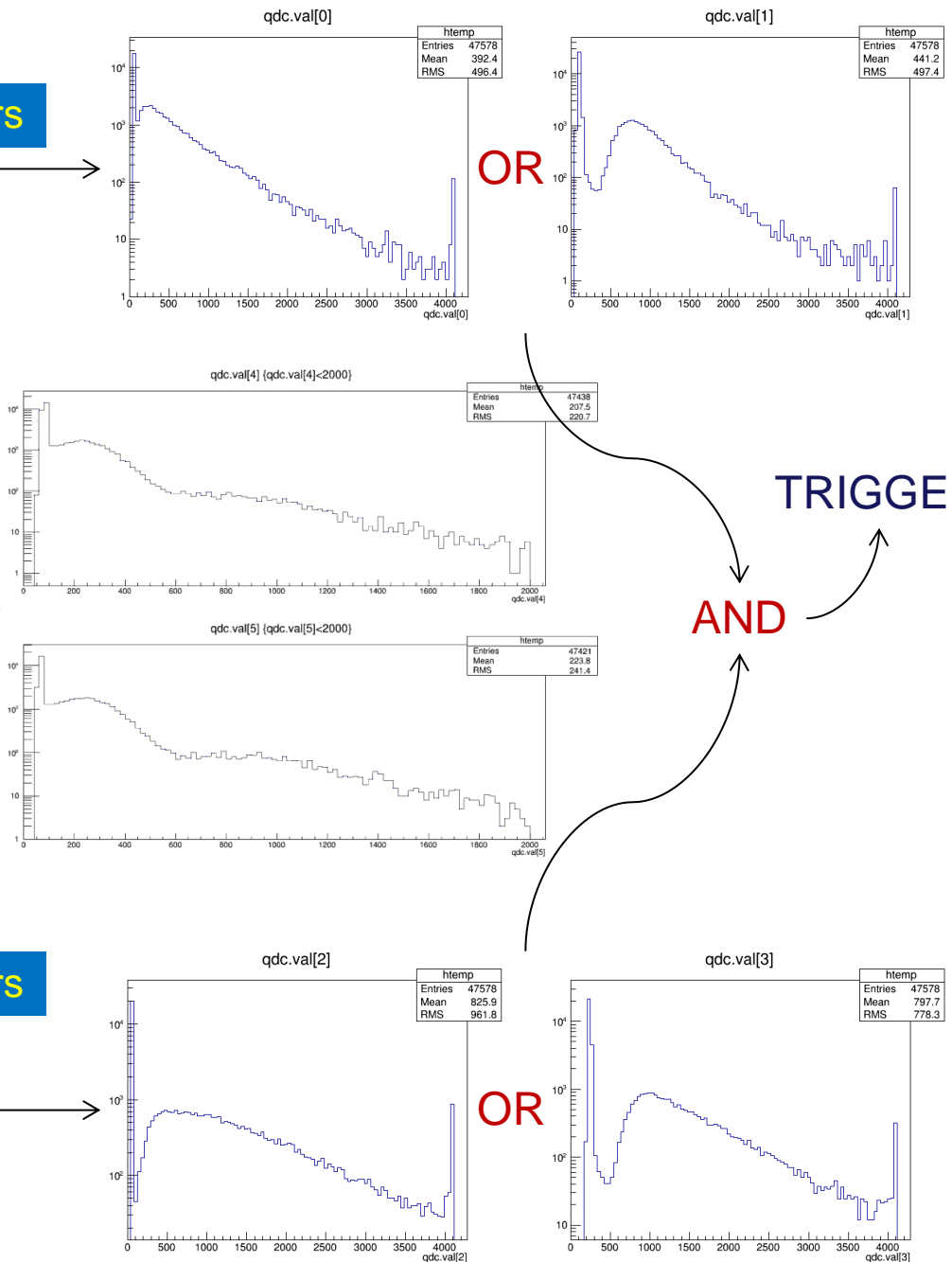
2 50x25 cm² Scintillators

GEMs
under test

10x10 cm² Scintillator

Reference 10x10 GEM

2 50x25 cm² Scintillators



MPD Fiber Optics Readout

- Paolo and Ben working on the MPD - Fiber Optics - SSP interface (based on the Aurora protocol)
- Ben is expected to provide in few days the SSP Protocol library to communicate over the Aurora
- Paolo will implement the MPD-SSP interface to the
- Paolo is working on the mechanism of remote firmware upgrade
- He is also testing a new version of the MPD resource map

