

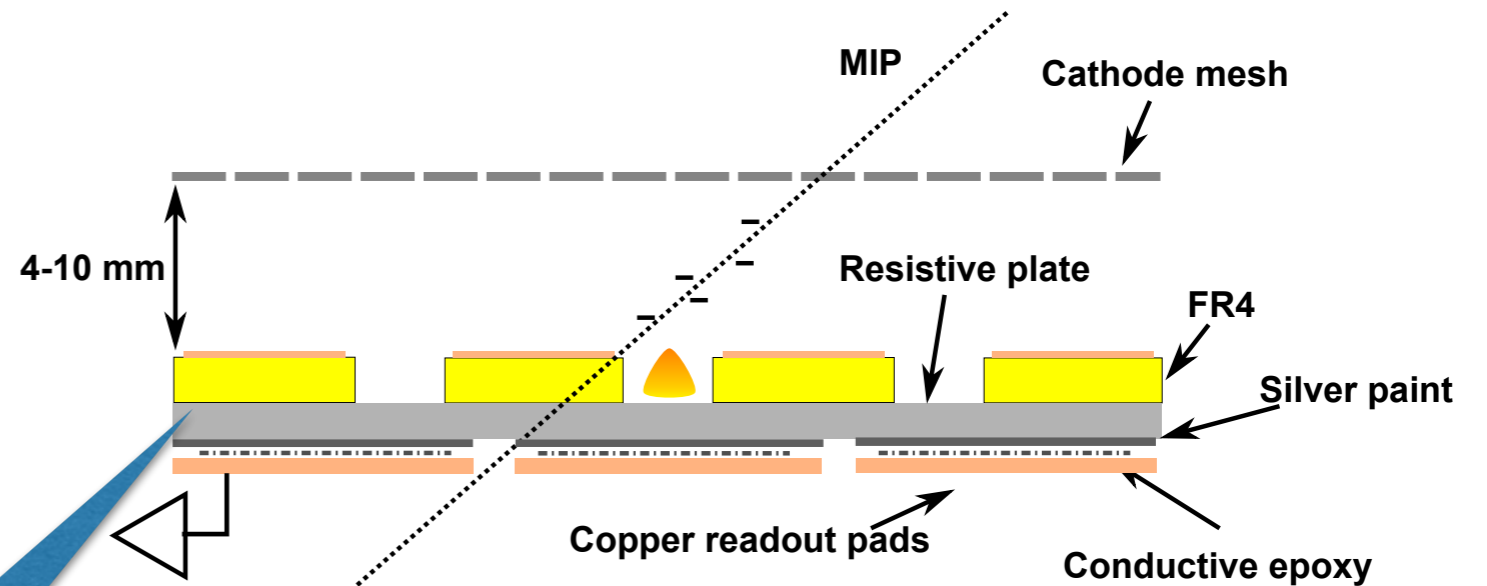
TB plan for RPWELL in SPS/H4 muon and pion beam

L. Moleri for WIS, Coimbra and Aveiro groups

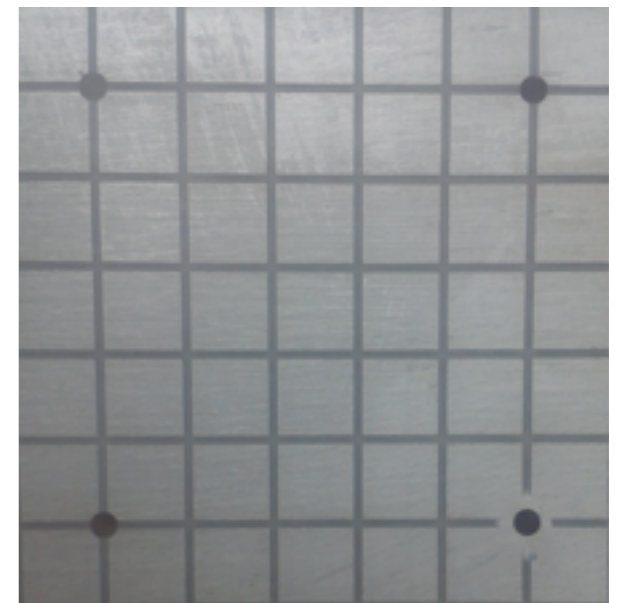
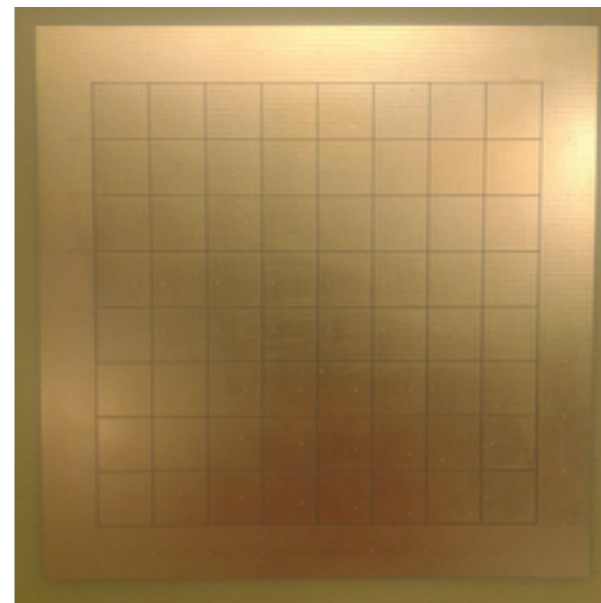
RD51 Mini Week - 09.06.2015

The RPWELL

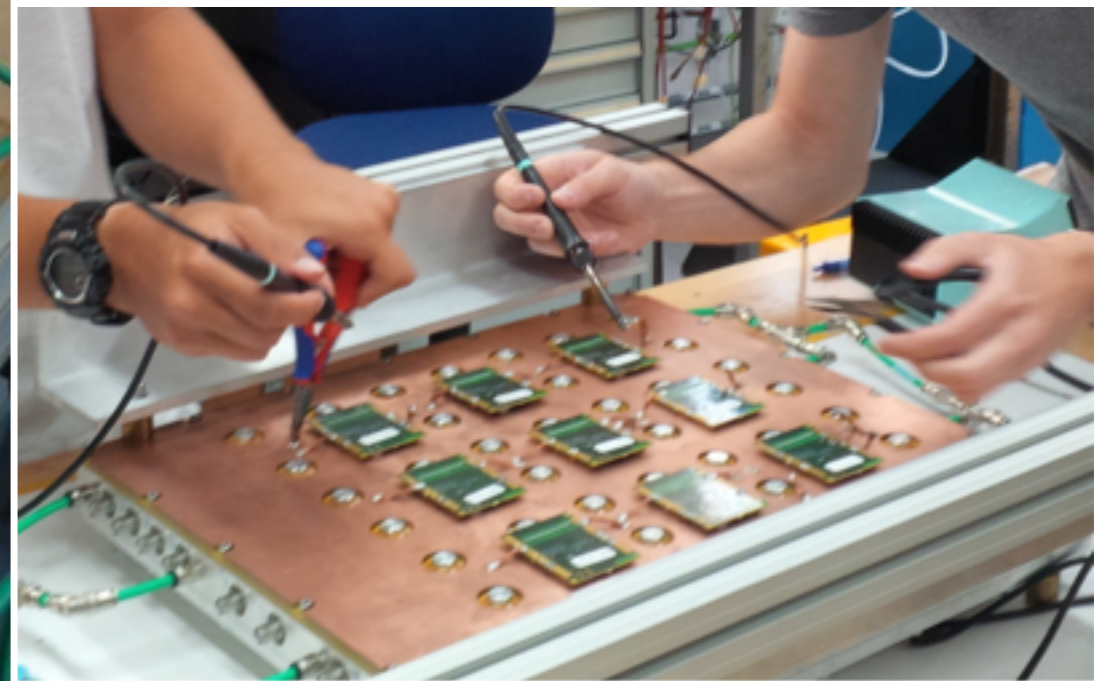
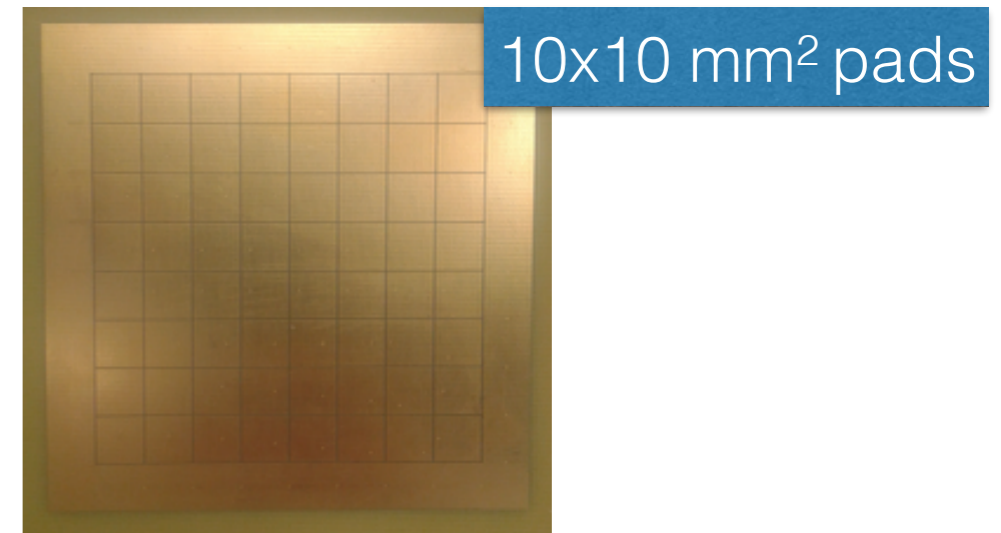
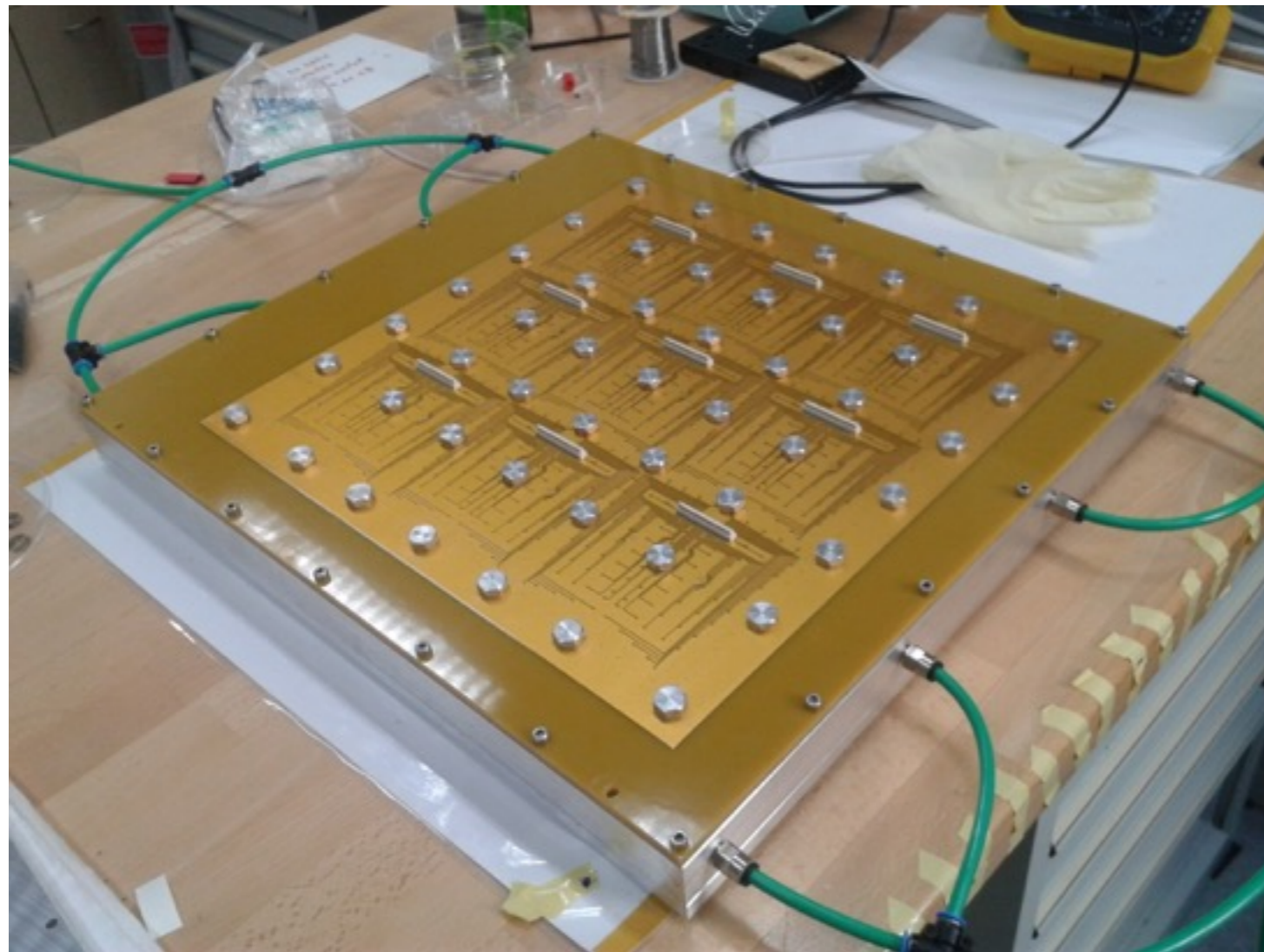
a single sided THGEM
coupled to anode through a
resistive plate
([http://iopscience.iop.org/
1748-0221/8/11/P11004](http://iopscience.iop.org/1748-0221/8/11/P11004))



0.4 mm Semitron ESD225 (bulk
resistivity $10^8 \Omega\text{cm}$)



All the detectors are read by the SRS with APV25 chips



Readout: SRS with APV25 chips

Detectors

RPWELL 100x100 mm²

- 5 mm drift gap
- $d = 0.5$ mm, $a = 1$ mm, $h = 0.1$ mm, $t = 0.8$ mm

RPWELL 300x300 mm²

- 5 mm drift gap
- $d = 0.5$ mm, $a = 1$ mm, $h = 0.1$ mm, $t = 0.8$ mm

Gas: Ne/CH₄(5%)

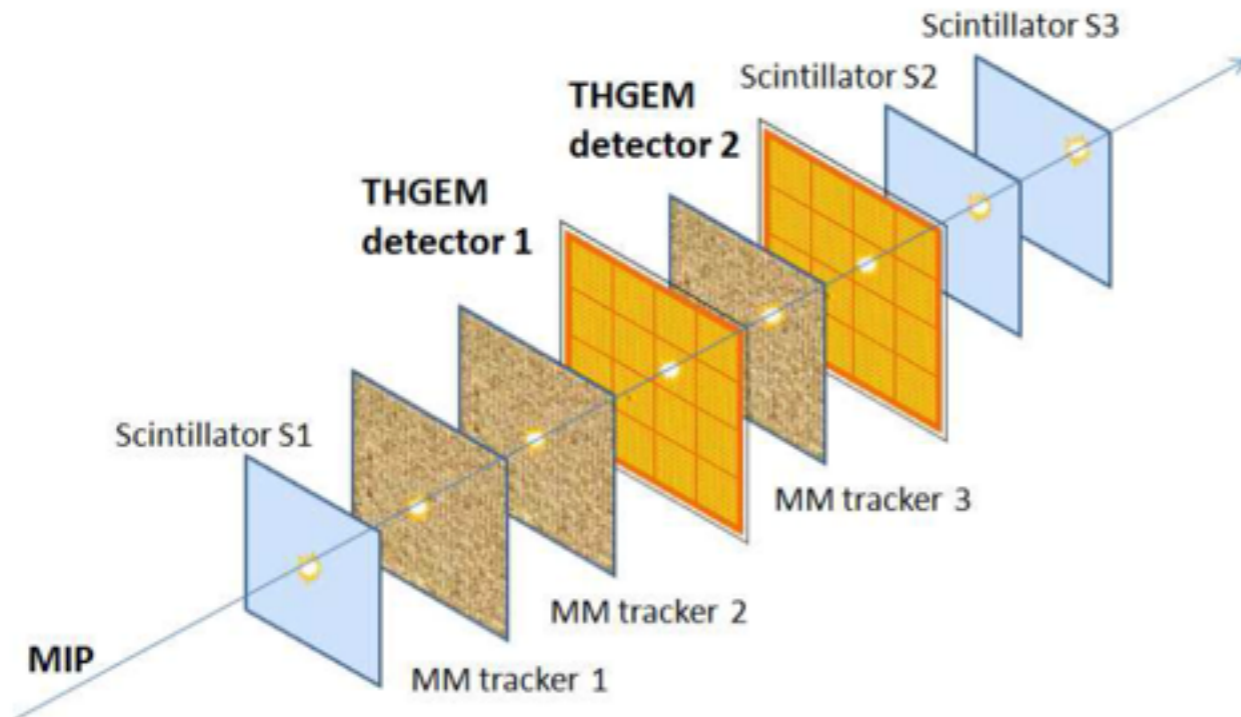
Ar/CH₄(5%)

Tested in TB14

First experiment

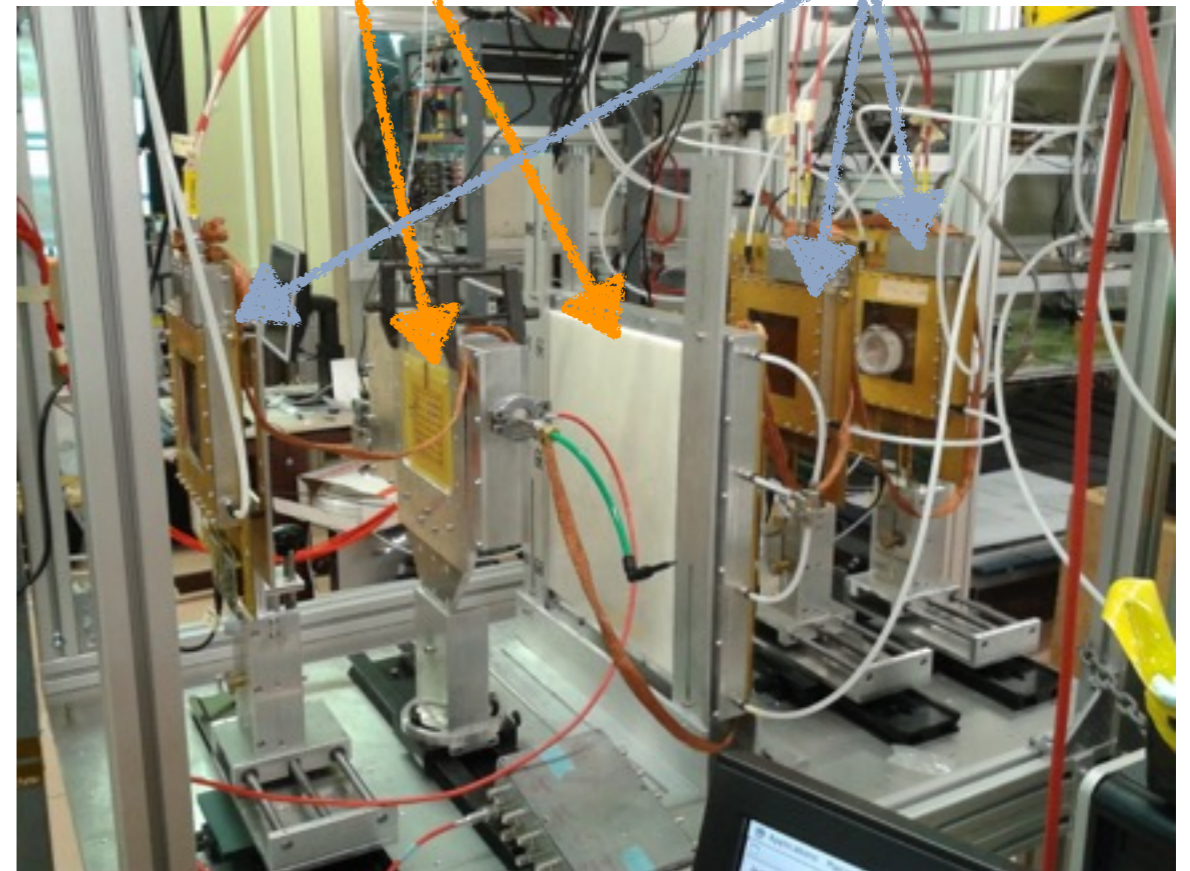
Beam: 150 GeV μ and π

Test beam setup



THGEM detectors

mm telescope



- RD51 mm telescope
 - 3 scintillators ($100 \times 100 \text{ mm}^2$ coverage)
 - 3 micromegas for precision tracking
- Two THGEM chambers
- Common DCS (HV control and monitoring)

Measurements

- Efficiency and multiplicity
 - Increasing particle flux
- Stability
 - Gain stability
 - Discharges

Goals and plans

- Goal: study the performance of RPWELL in Ar/CH₄(5%) mixture
- Plans: start with the known Ne/CH₄(5%) as a baseline and then switch to Ar/CH₄(5%)

Required support

- mm tracker
- HV and logging system
- Trigger switch to random acquisition in control room