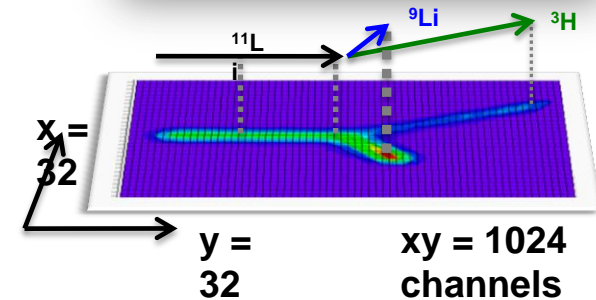
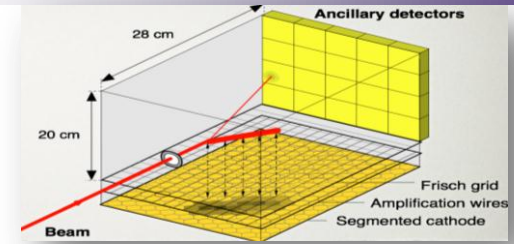


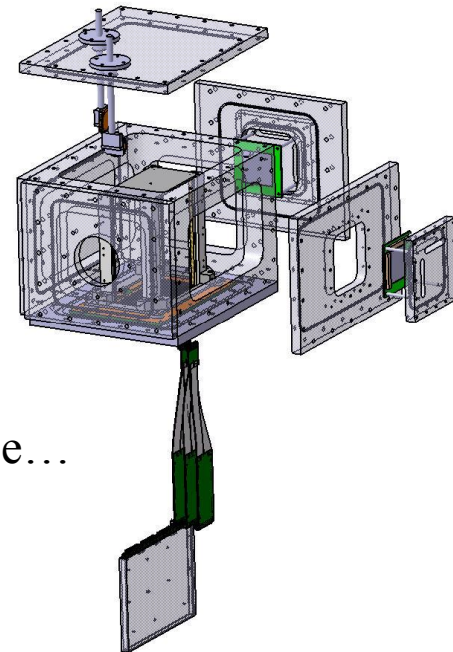
Active targets in nuclear physics

- Based on TPC concept from particle physics
- The Gas is also the target for nuclear reaction study
- CENBG TPC (2p decay), MAYA (GANIL)...
- Astrophysics, Nuclear structure:
 - Nucleon transfert on light or FF nuclei
 - Resonant reactions
 - Exotic decays...
- Advantages versus classical solid targets:
 - Trajectory reconstruction
 - efficiency (gas thickness...)
 - Low energy threshold
 - Direct study on beam energy dependance



In the framework of SPIRAL2, several Letters Of Intent submitted, need for an improved detection system for the next years.

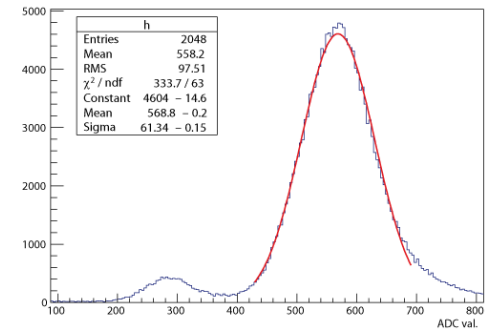
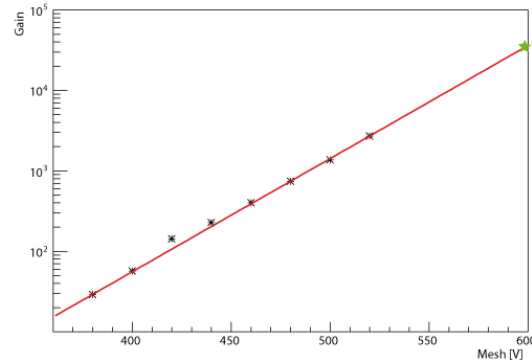
ACTAR demonstrator with 256 channels (over 2k) operational since 4 months



Need for a 2k channels detector to adress different questions:

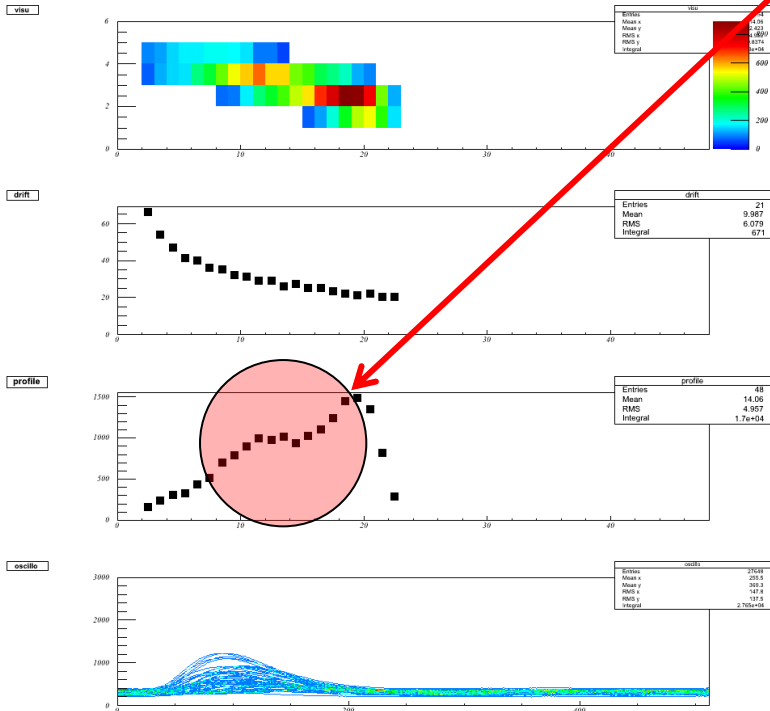
- Mechanical solution for the pad plane: connectics, gas/air interface...
- Field cage quality
- Source & beam tests with GET electronics

Detector Calibration issues

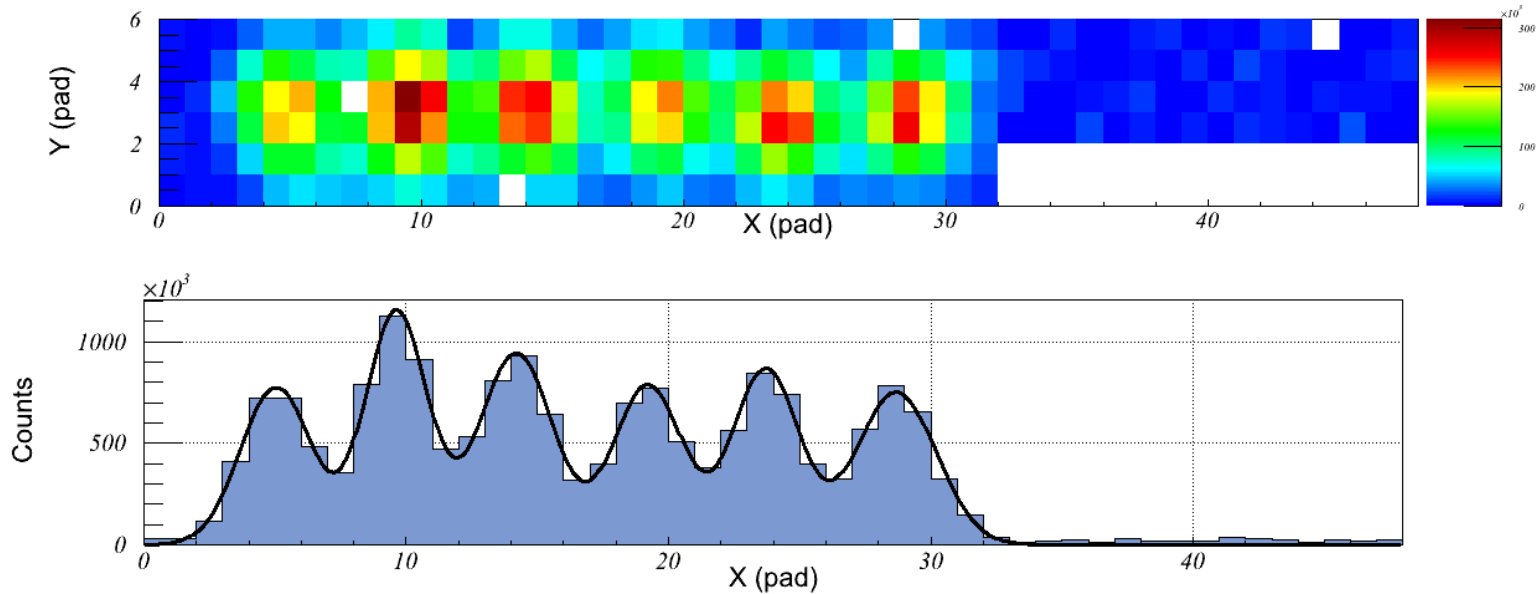


Problem observed:

- Non homogeneity in energy measurement (alpha bragg peak meas.) (10%)
- Drift field cage or micromegas ??
- Systematical meas. with a collimated ^{55}Fe source
- Pressure variation corrections (3% / mbar)
- Cross checked between pads and mesh



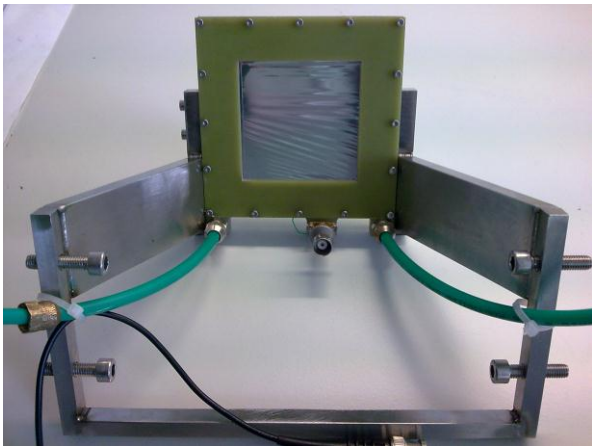
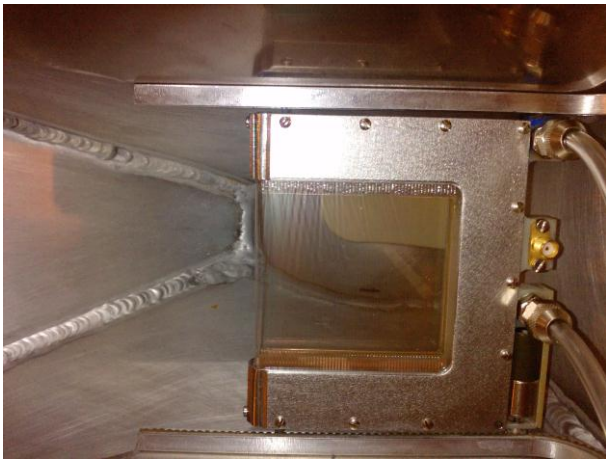
Source position



\Rightarrow Micromegas gap non
homogenous (3% / microns)

- Need for a good calibration
 - X, Y motor with ^{55}Fe
 - cosmic rays
 - Laser

Tracking for low energy nuclei : MWPPA (<10 mbar)



Time resolution <200 ps
X,Y meas. since 4 months:
- gassiplex electronics
- 150 microns of spatial resolution