

Measurements for comparing the performance of GEM:s and MicroMegas

- 1) The measurements should be done with the same readout electronics
- 2) The data should be analyzed with the same analysis program (Marlin TPC)
- 3) Space resolution in the r-phi plane
- 4) Space resolution in z as a function of shaping time
- 5) Two track resolution
- 6) Momentum resolution (although it requires external precision detectors)
- 7) dE/dx resolution (should be done at a hadron beam)
- 8) The homogeneity of the amplification over the module.

Another question is what the optimal pad size is.

Up to now the pad size with MicroMegas has been significantly bigger than in the GEM system.

Martin Killenberg has shown in his presentation on May 22 that the momentum resolution of a pixel detector is only slightly better than that of a GEM detector with $1 \times 6 \text{ mm}^2$ pads at 200 GeV.

So, maybe a better approach would be to define what the performance of the TPC should be and then find out how the various readout systems could look like to satisfy this. Important aspects are also costs, power consumption etc.