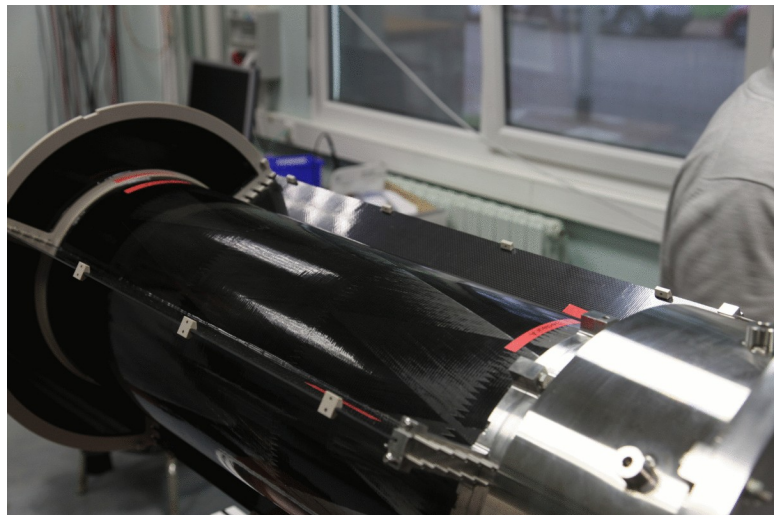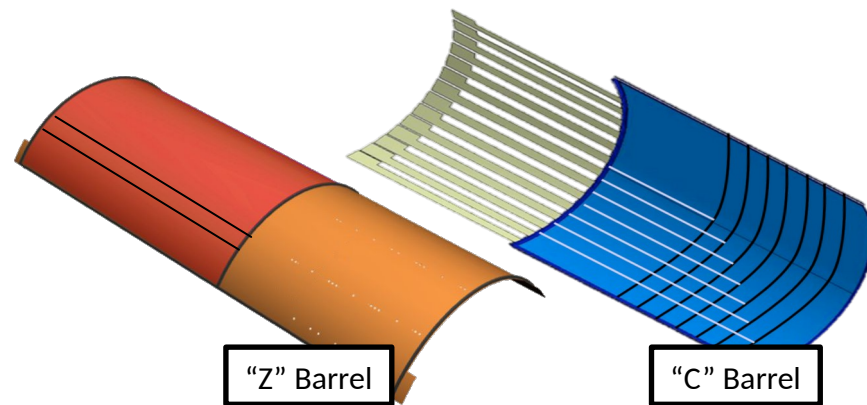# The Micromegas Vertex Tracker

- Total of 6 layers segmented in phi (3 x 120° sectors)
- 6 Different detector's radii
- 2 different types (C and Z types)
- Drift gap: 3mm; Amplification gap: 128um
- Mesh: 70/30
- Gas: 95% Ar + 5% isobutane

"Z" Barrel

"C" Barrel

Layer	Detector	Radius (mm)	Length (mm)	Width (mm)	Channels	Active area Length (mm)	x width (mm)
6	CR6C	222.53	712	459	1152	445	438
5	CR6Z	207.54	712	427	768	445	407
4	CR5C	192.65	712	396	1024	420	376
3	CR5Z	177.57	712	364	640	421	344
2	CR4Z	162.56	712	333	640	373	313
1	CR4C	147.57	712	302	896	372	281

F. Bossù,

- Run taken in summer 2022

- Preliminary reconstruction, alignment and calibration

- Target: Polarized NH_3

- Electron beam: energy ~10.6 GeV; I = 4nA

- B field: 5 T
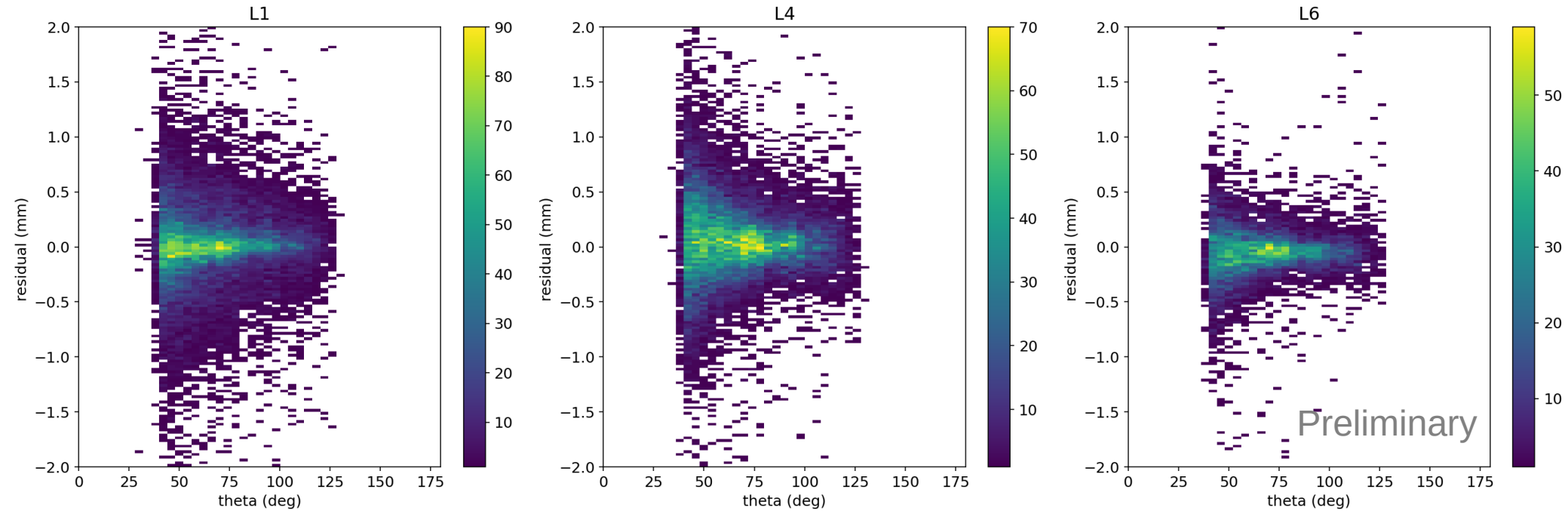
- Target position about -6 < z < 0 cm

Cluster size

- Clear dependence of the cluster size to the angle of the track
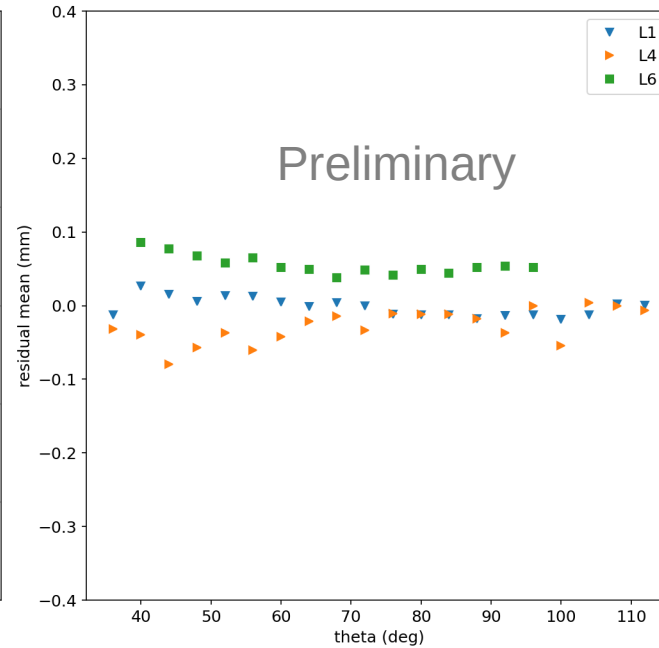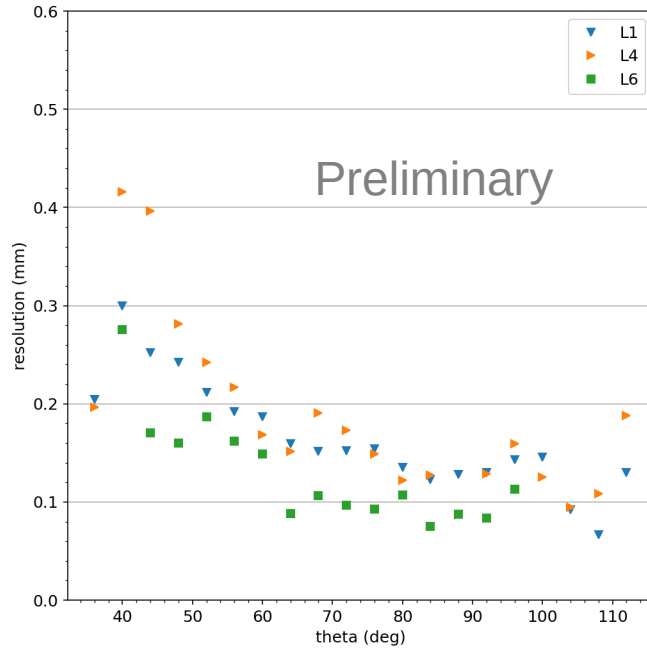- Mitigated in C-tiles by the increased pitch
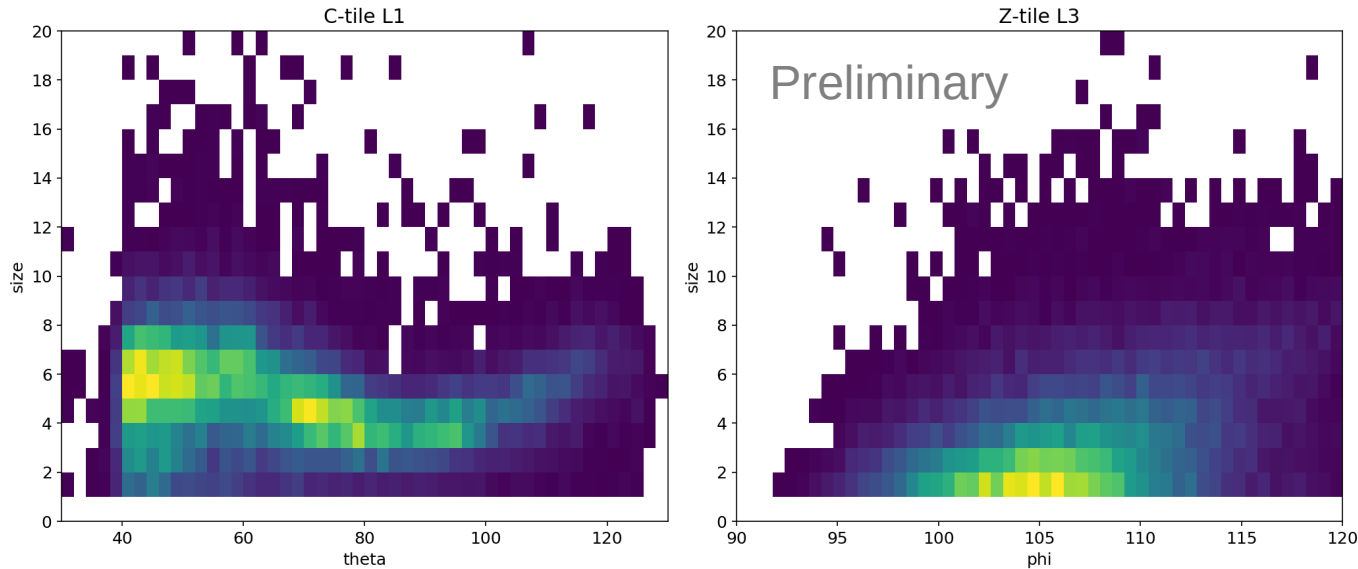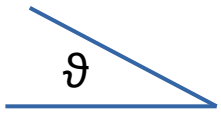
CAVEAT: the cluster algorithm allows for missing strips, but it does not put a limit on how many gaps in a cluster, i.e. slightly biased towards larger clusters
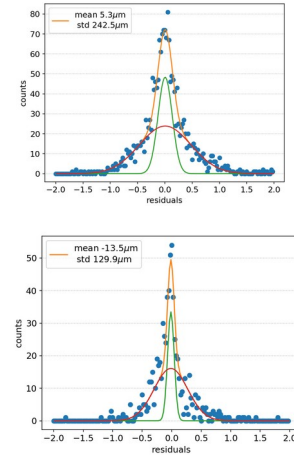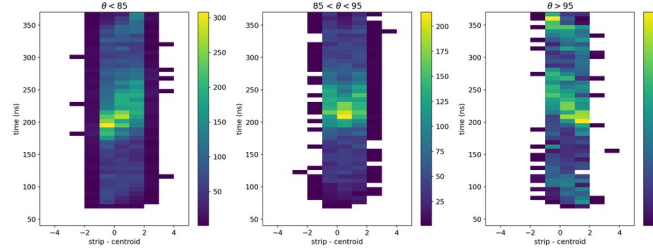
Residuals of clusters on track

Resolutions C-tiles

Examples L1

Resolutions increasing with theta, up to ~400µm for tracks at 45deg

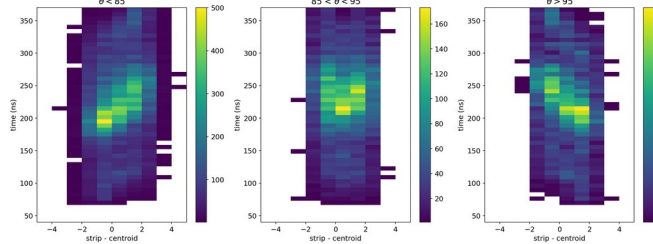Still some residual misalignment: not the final version of the reconstruction software
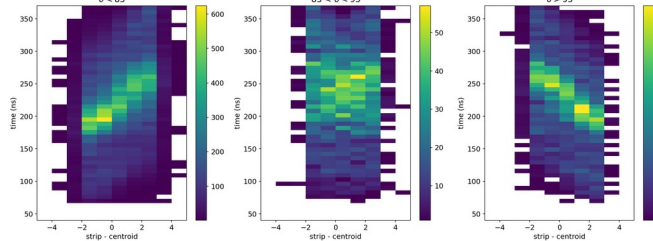
Size 3

Size 4

Size 5

Size 6

Preliminary

Clear correlation of the time of max in a cluster

Can be used to improve the spatial resolution