

Correction/resolution results with position scan data

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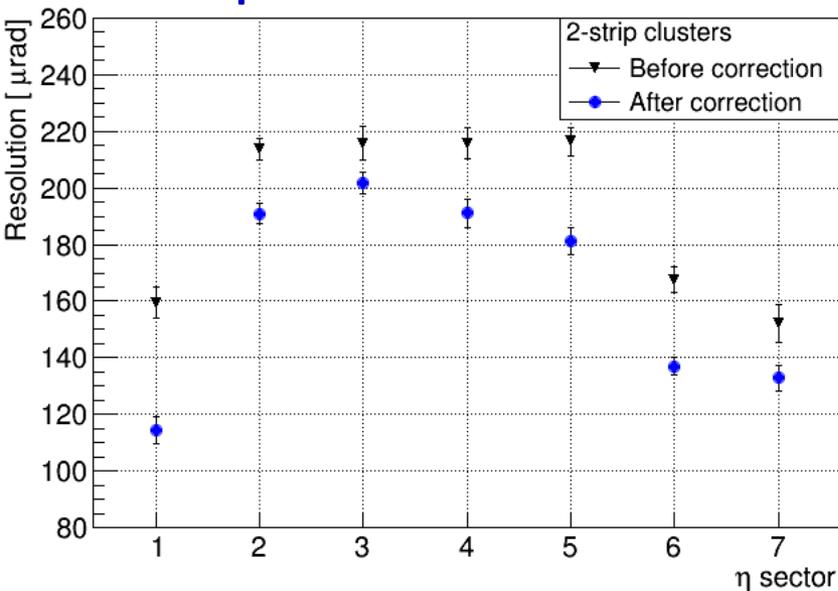
Florida Tech

2014-08-25

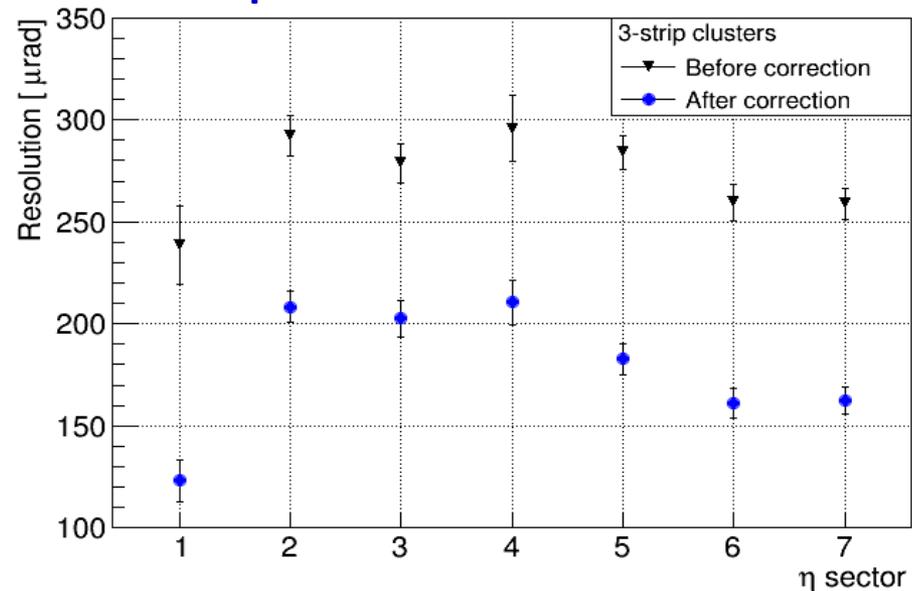
EIC Tracking R&D meetings

Resolutions in middle(zigzag) positions (HV 3200V)

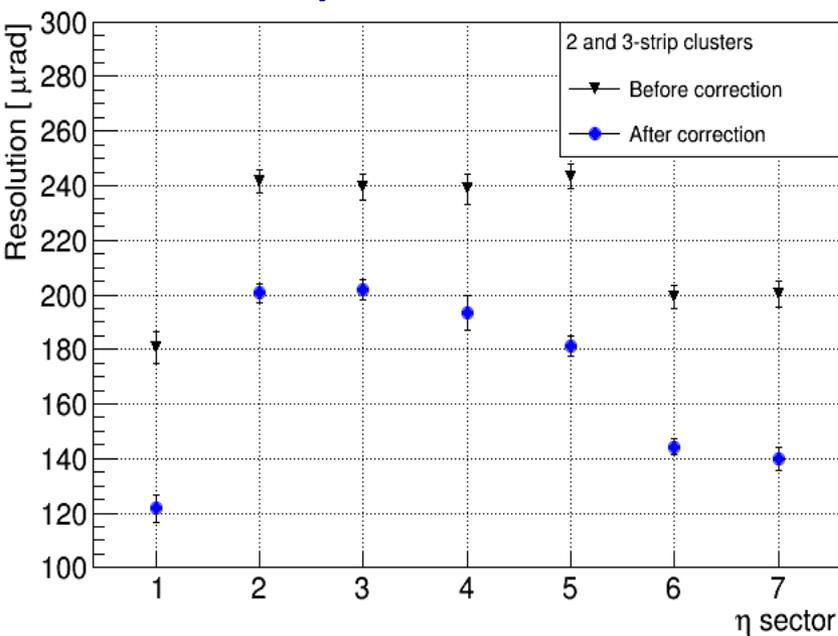
2-strip clusters



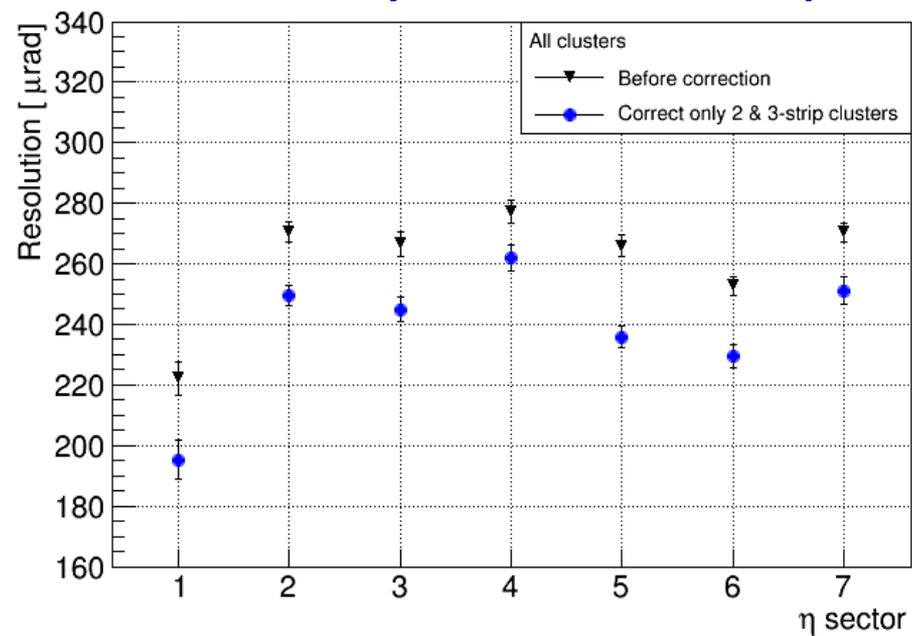
3-strip clusters



2 & 3-strip clusters

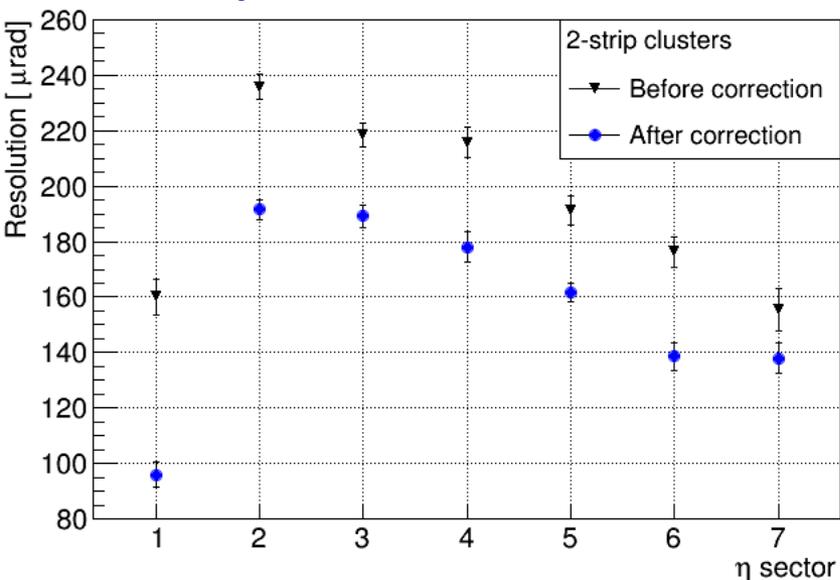


All clusters, only corrected 2 & 3-strip clusters

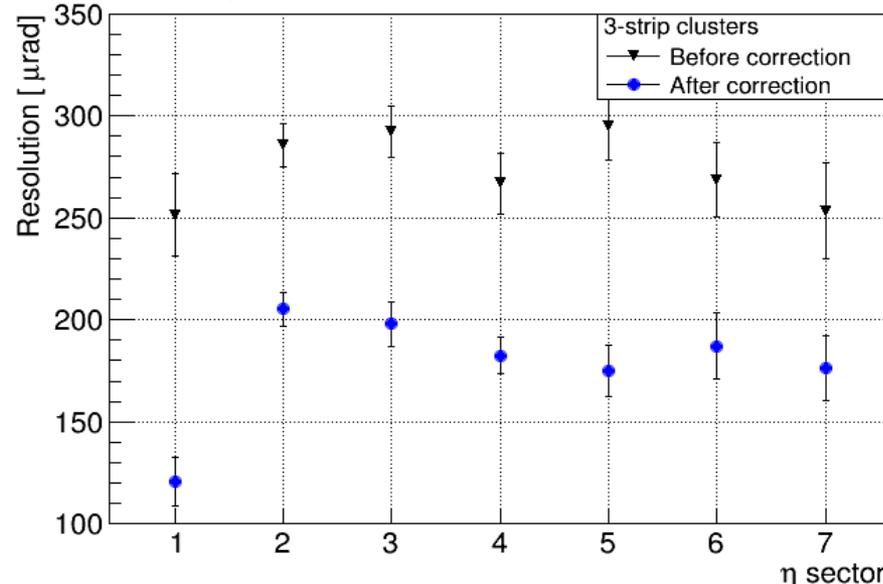


Resolutions in upper(zigzag) positions (HV 3200V)

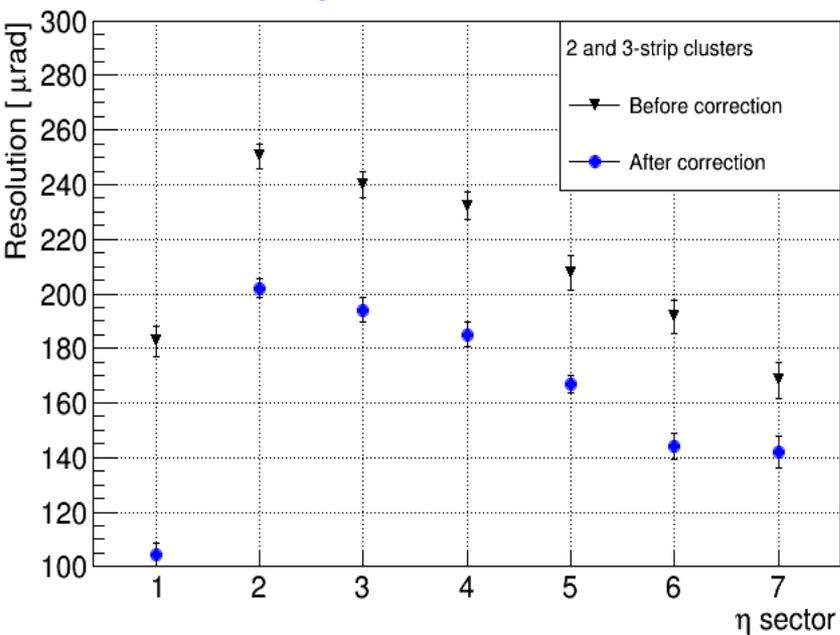
2-strip clusters



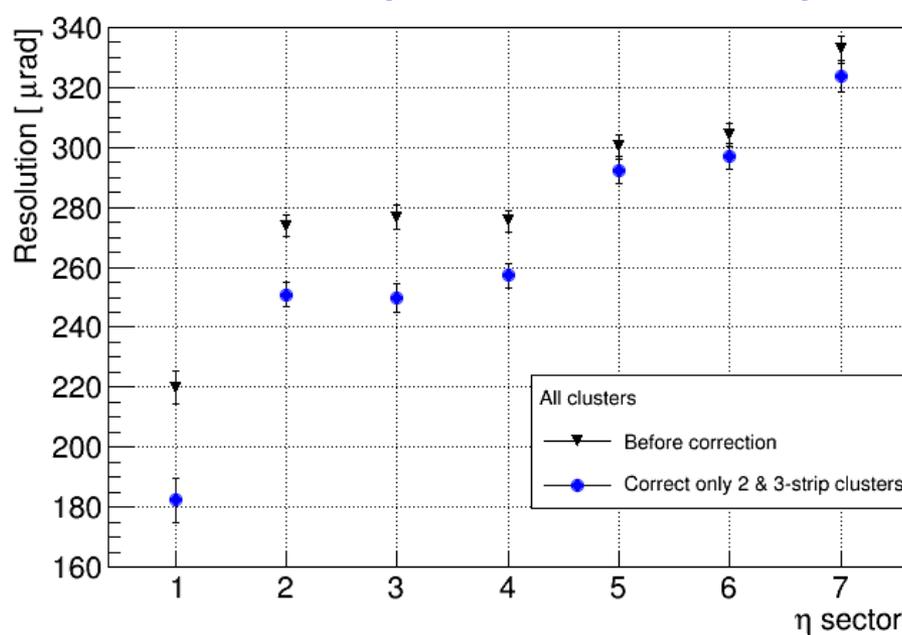
3-strip clusters



2 & 3-strip clusters

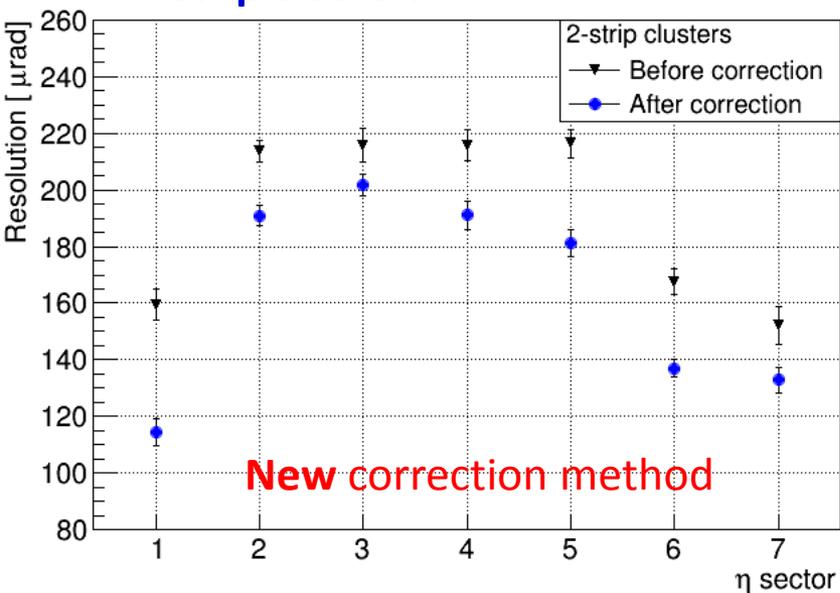


All clusters, only corrected 2 & 3-strip clusters

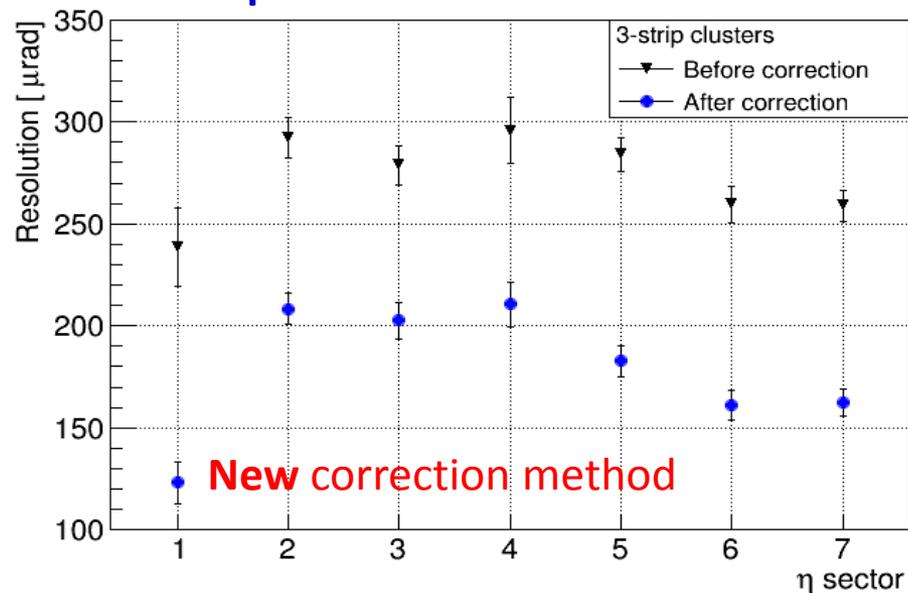


Resolutions in middle(zigzag) positions

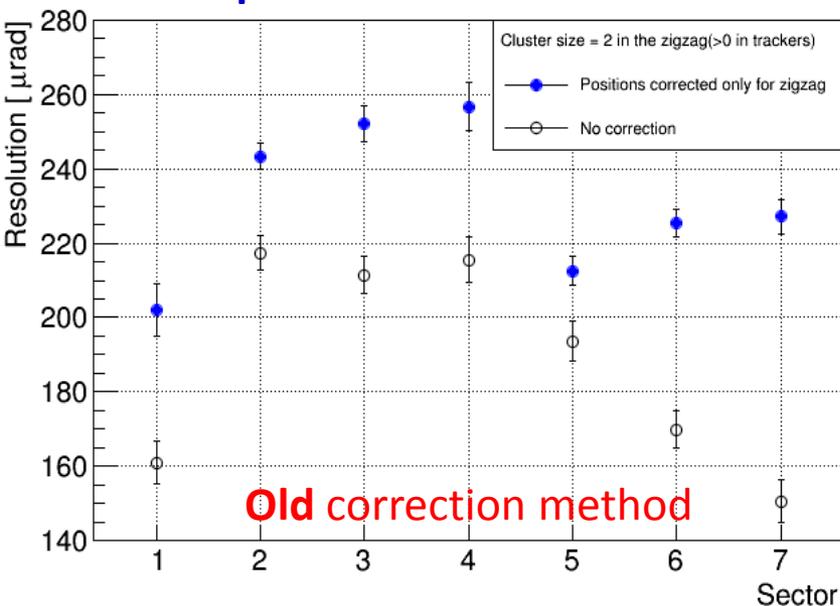
2-strip clusters



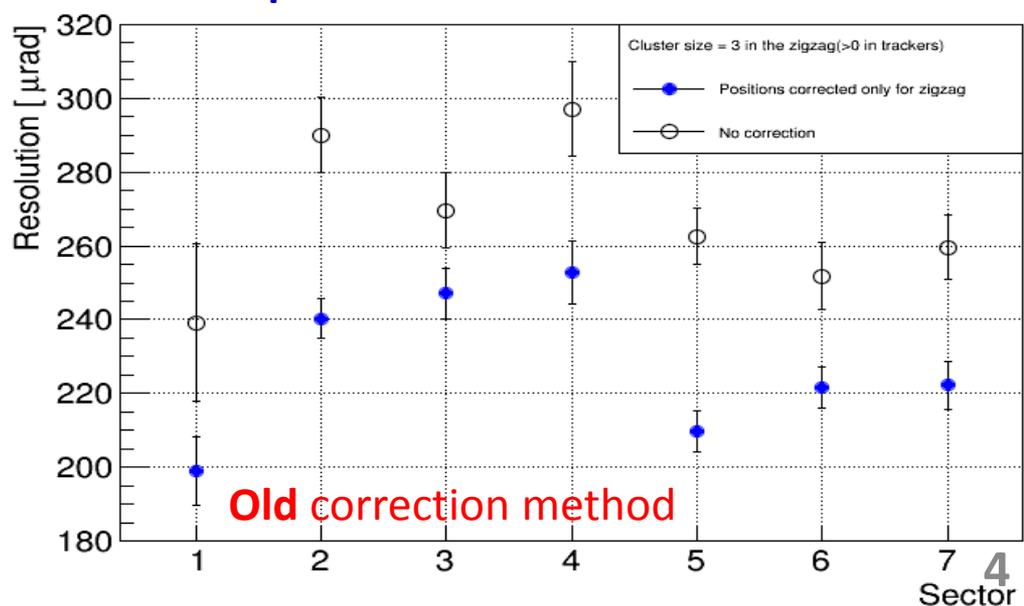
3-strip clusters



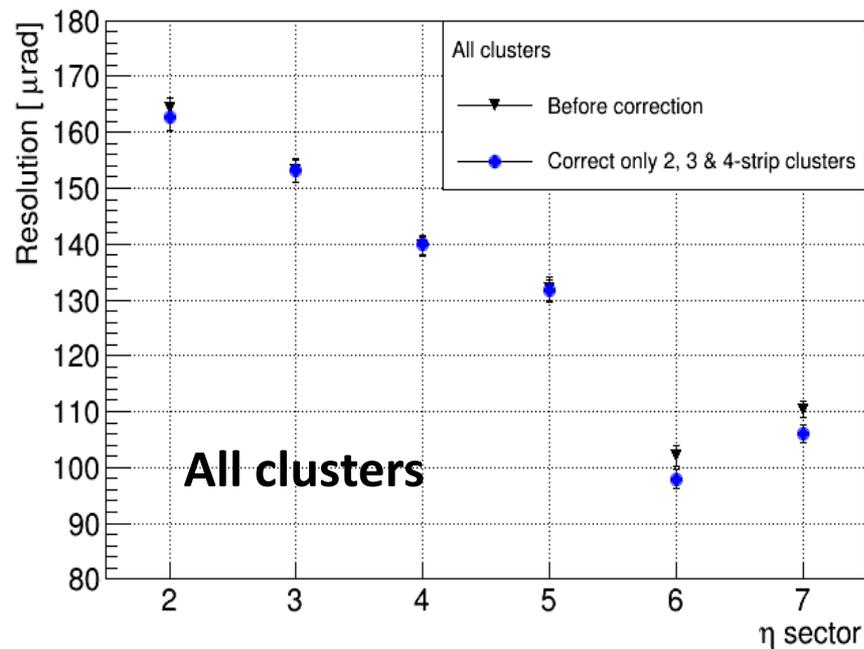
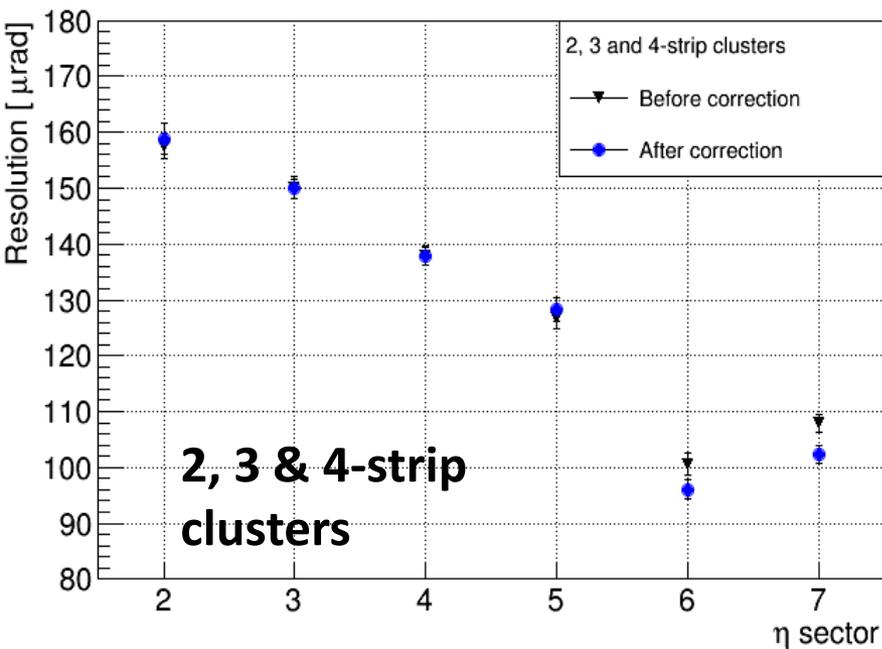
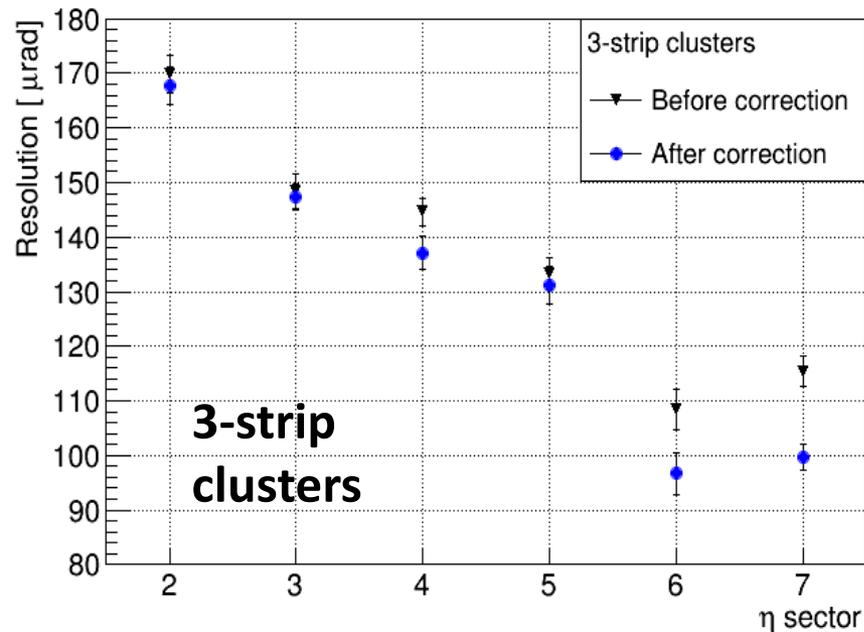
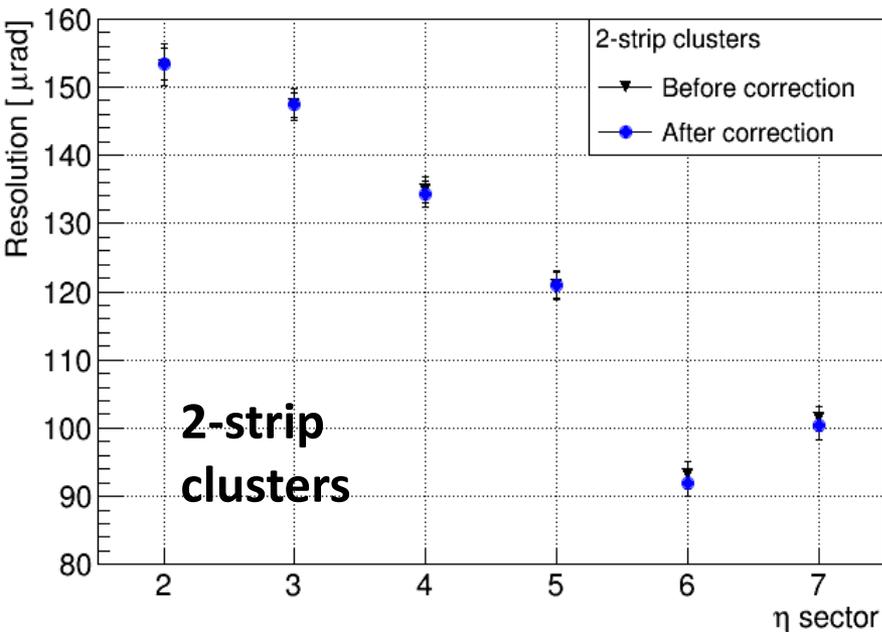
2-strip clusters



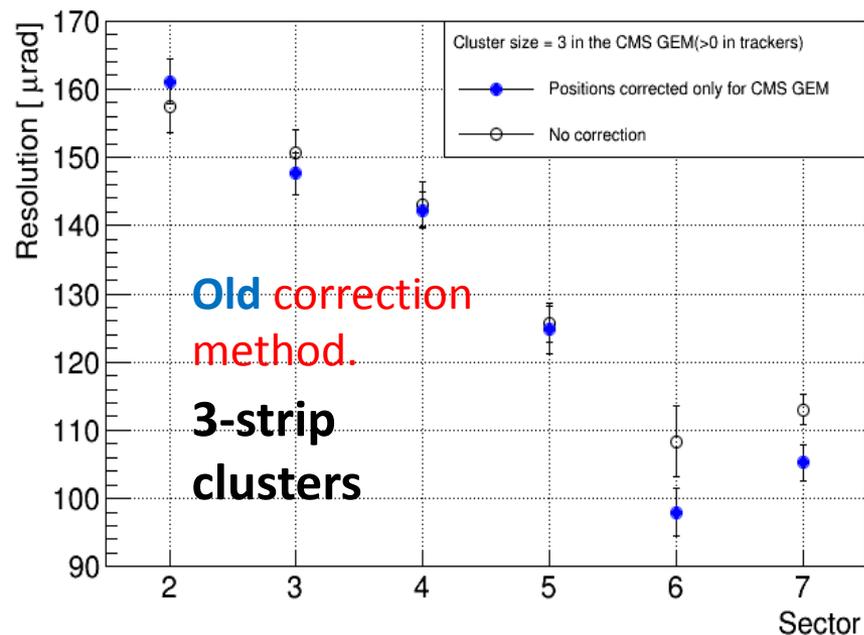
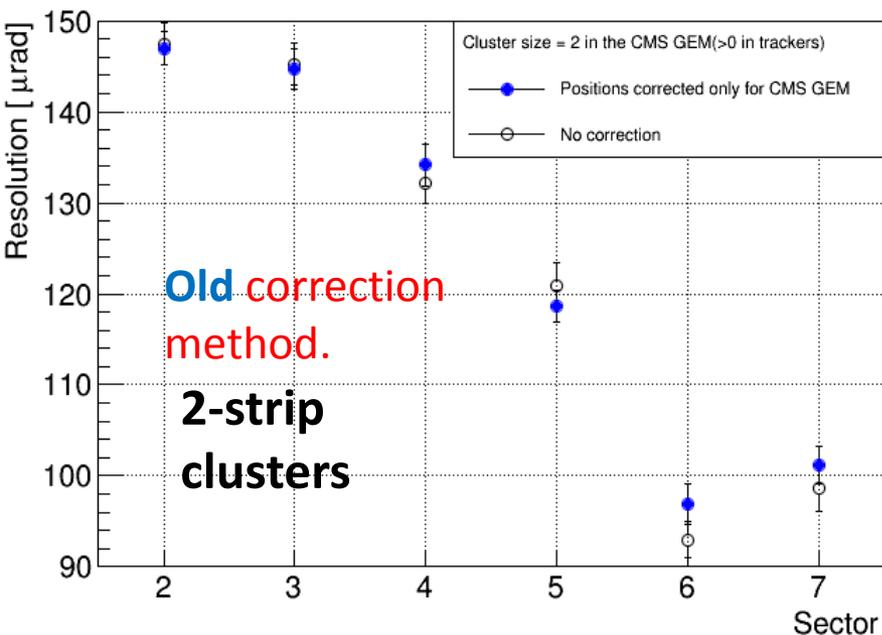
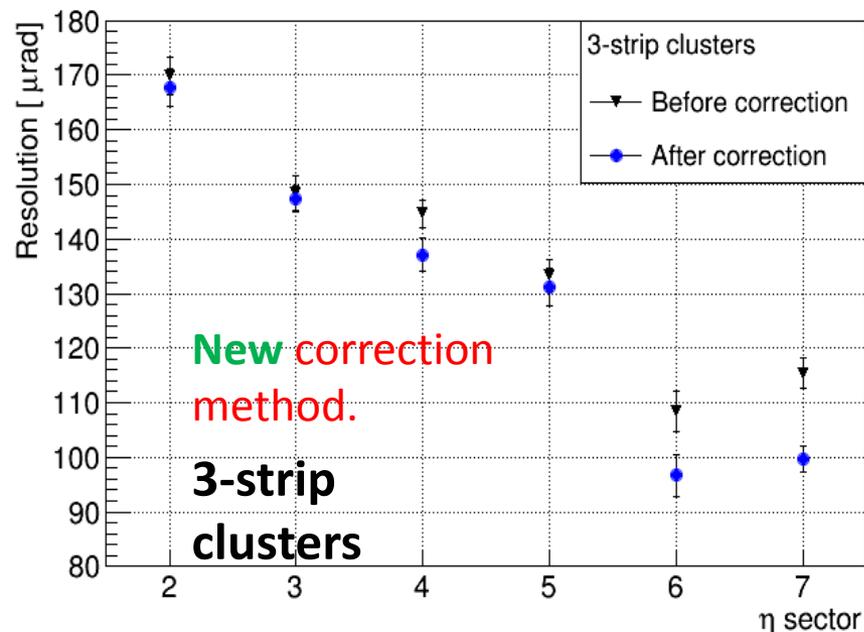
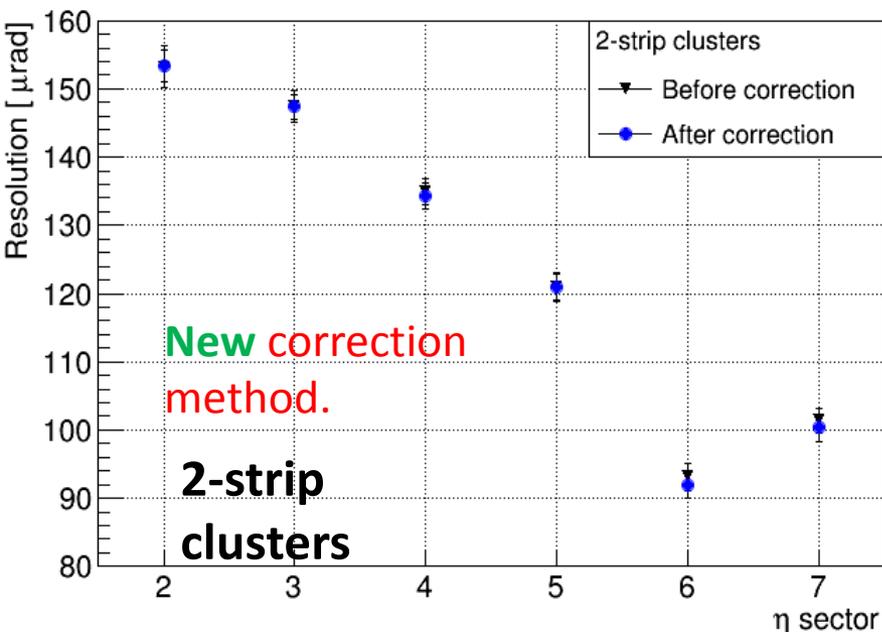
3-strip clusters

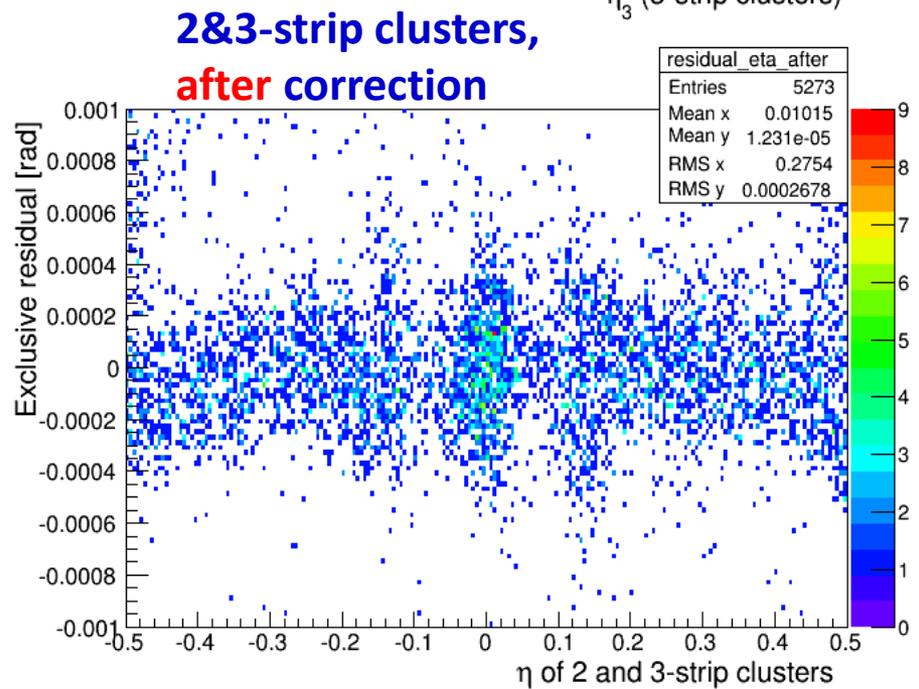
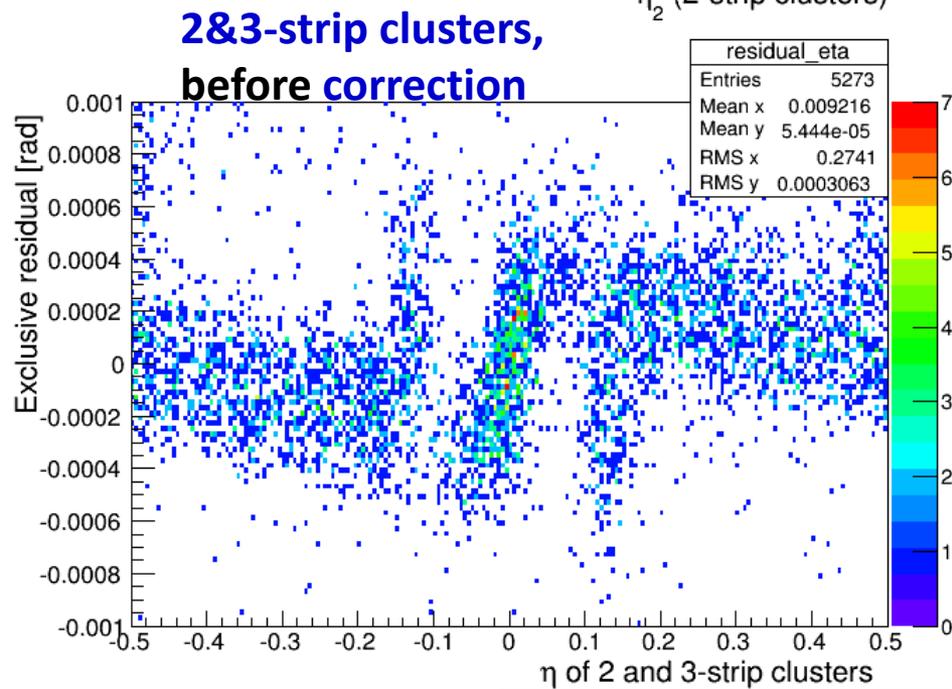
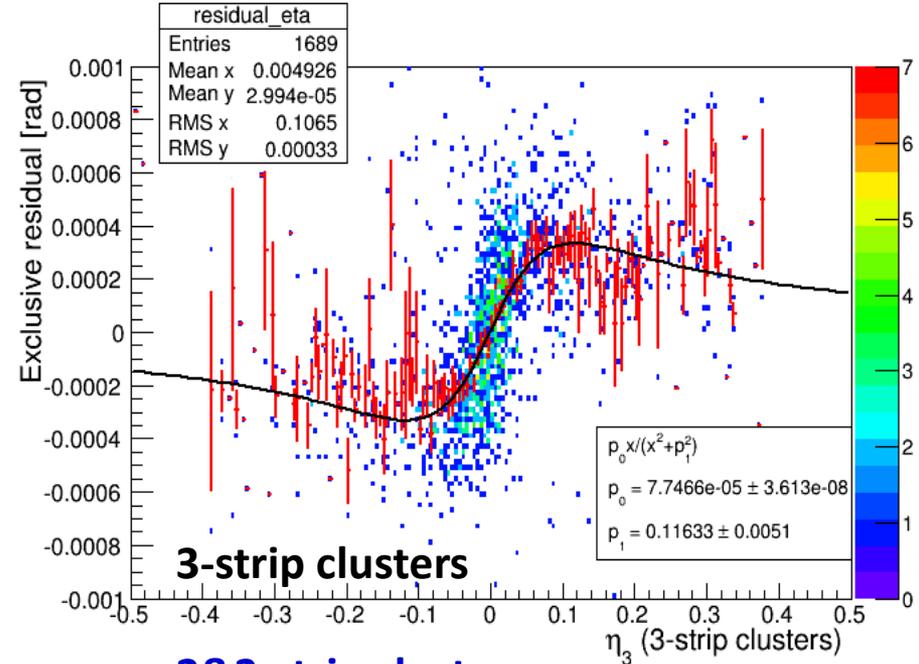
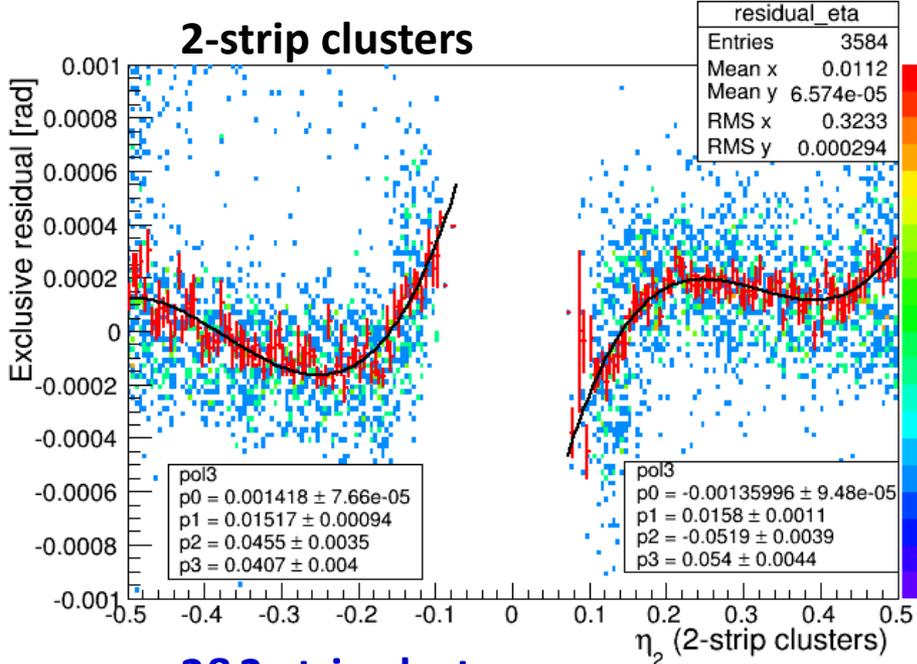


Resolutions in middle(straight strip) positions (HV 3250V)

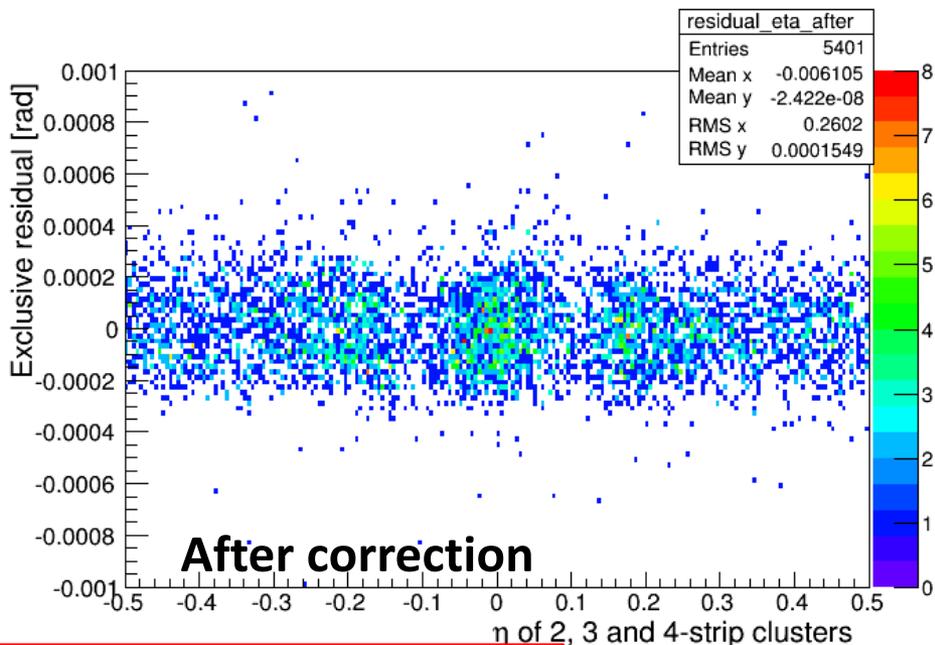
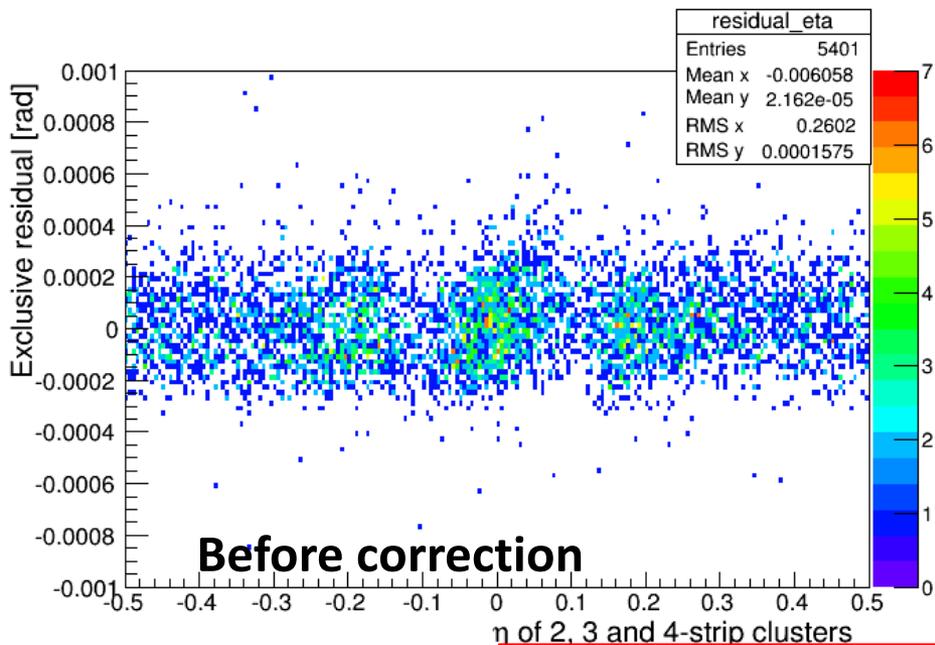
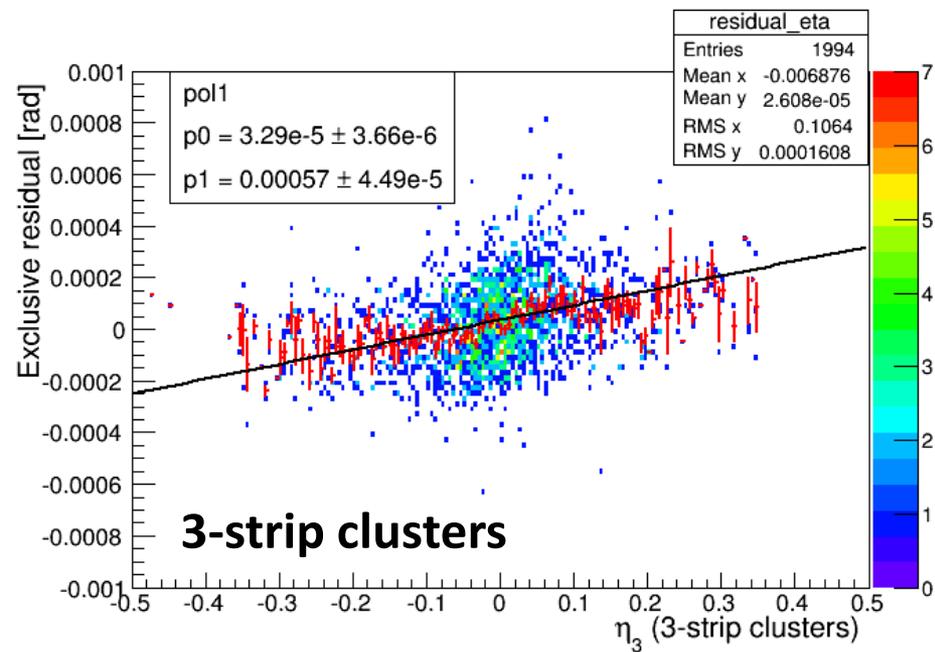
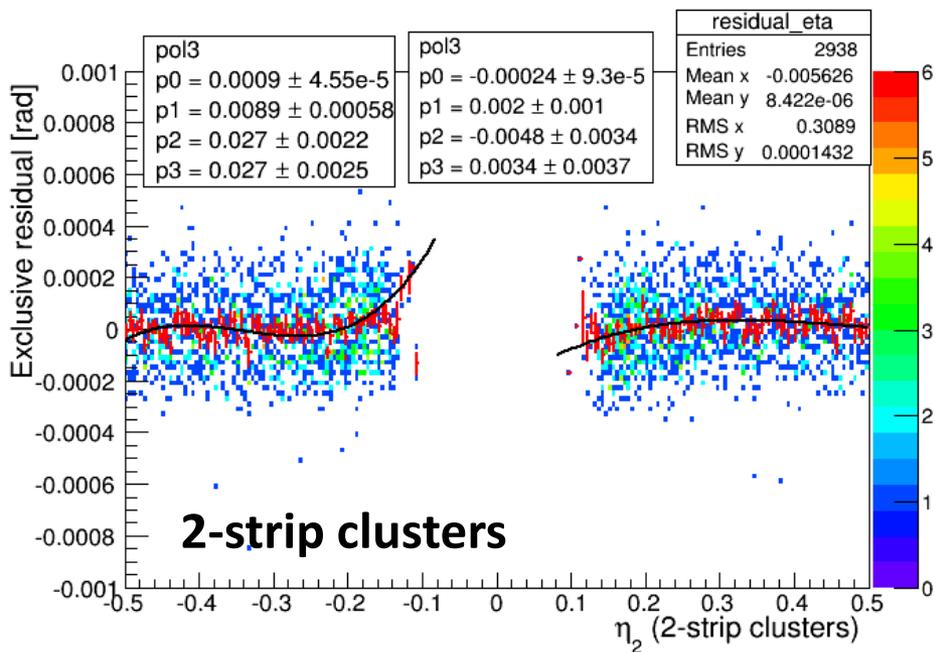


Resolutions in middle(straight strip) positions (HV 3250V)





Sector 5 – Middle pos. – Zigzag strip



Sector 5 – Middle pos. – Straight strip

Summary

- For the zigzag GEM, resolutions are improved with the new correction method. The typical (resolution) numbers are $\sim 240\mu\text{rad}$ (before correction) and $\sim 170\mu\text{rad}$ (after correction).
- Improvement is small for the straight strip case. A naïve understanding is “correction is unnecessary when resolution is smaller than a certain number”.
- next plans:
 - (1) waiting for the simulation effect on multiple scattering;
 - (2) write the paper soon;
 - (3) study the effect R direction (select events in small ranges along R axis and we expect to see some systematic behaviors. We may be able to do this study, though statistics is small.).