

INTT weird events

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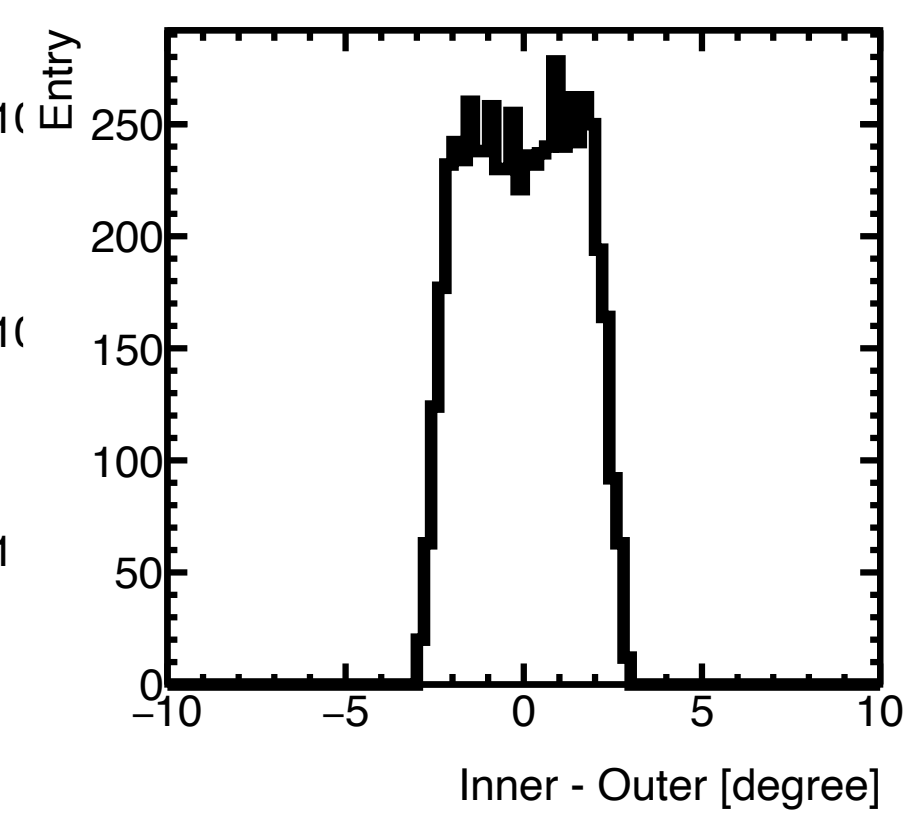
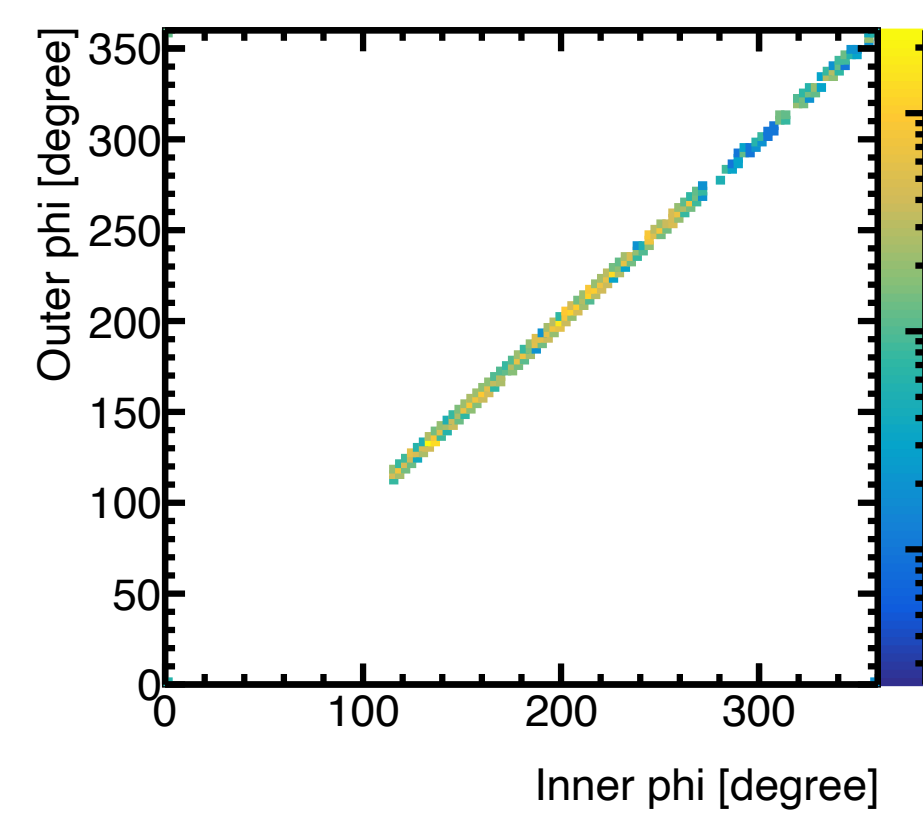
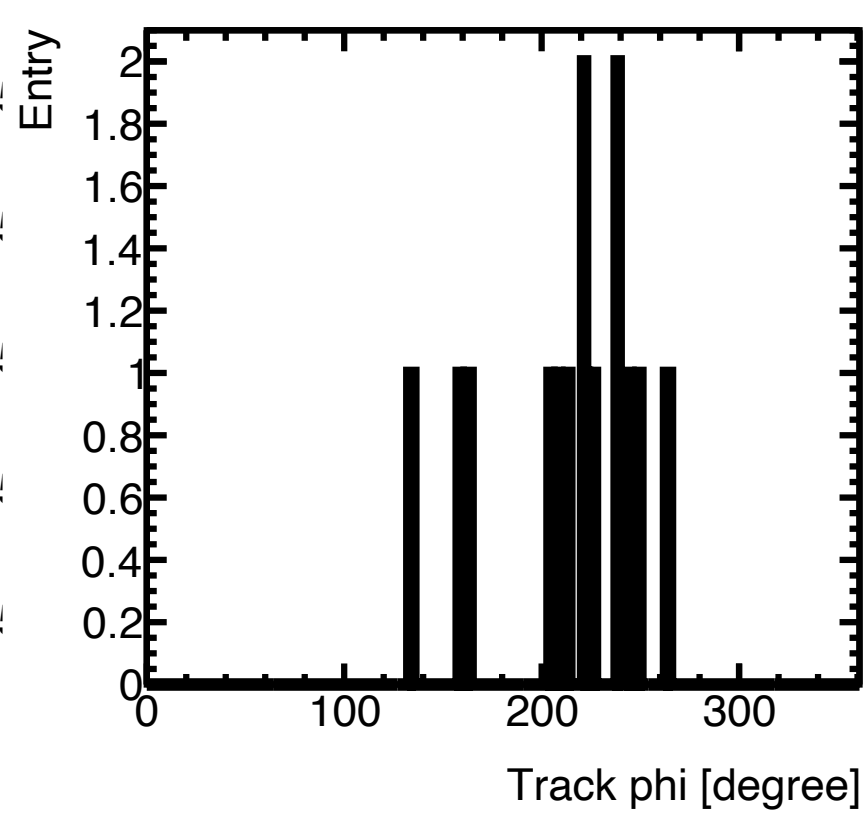
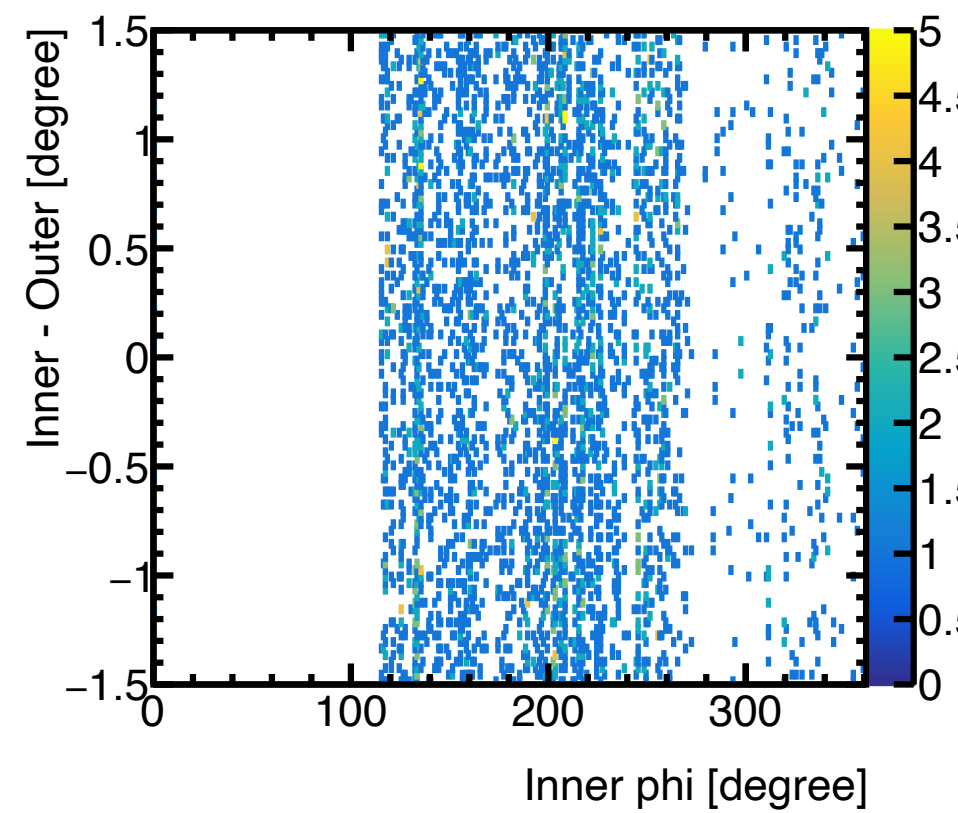
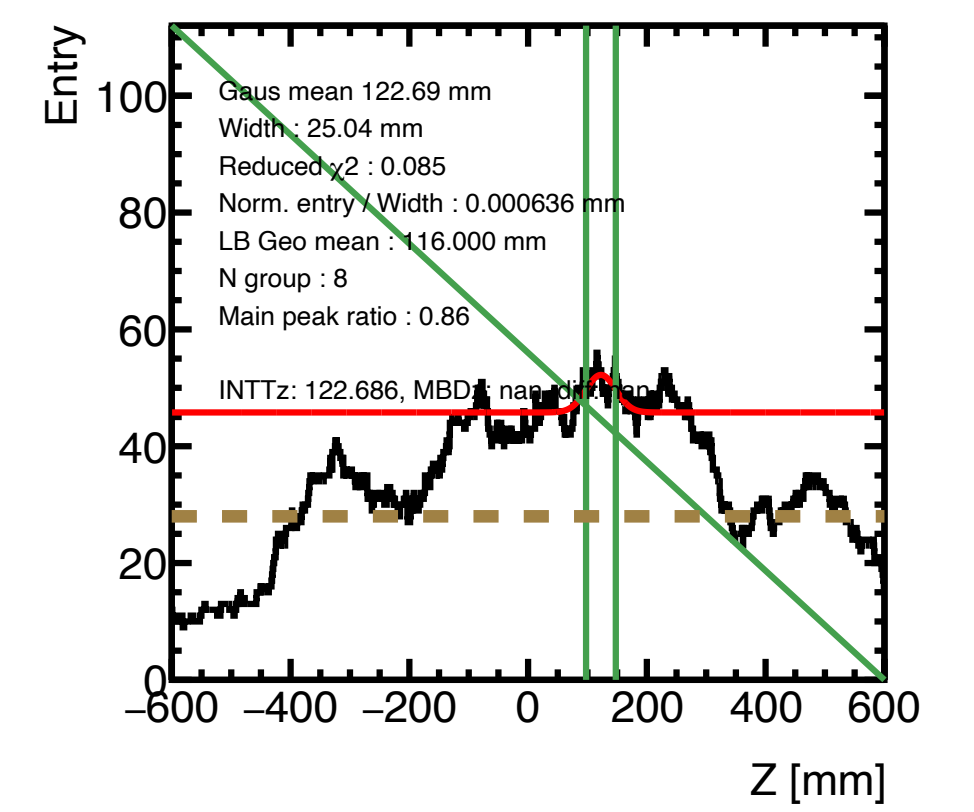
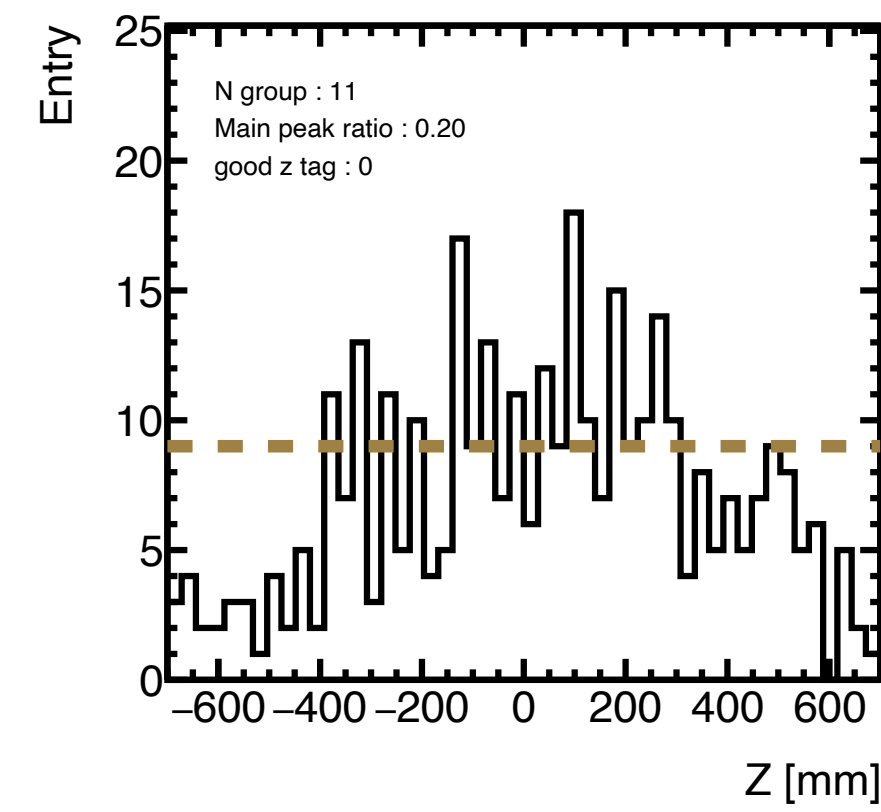
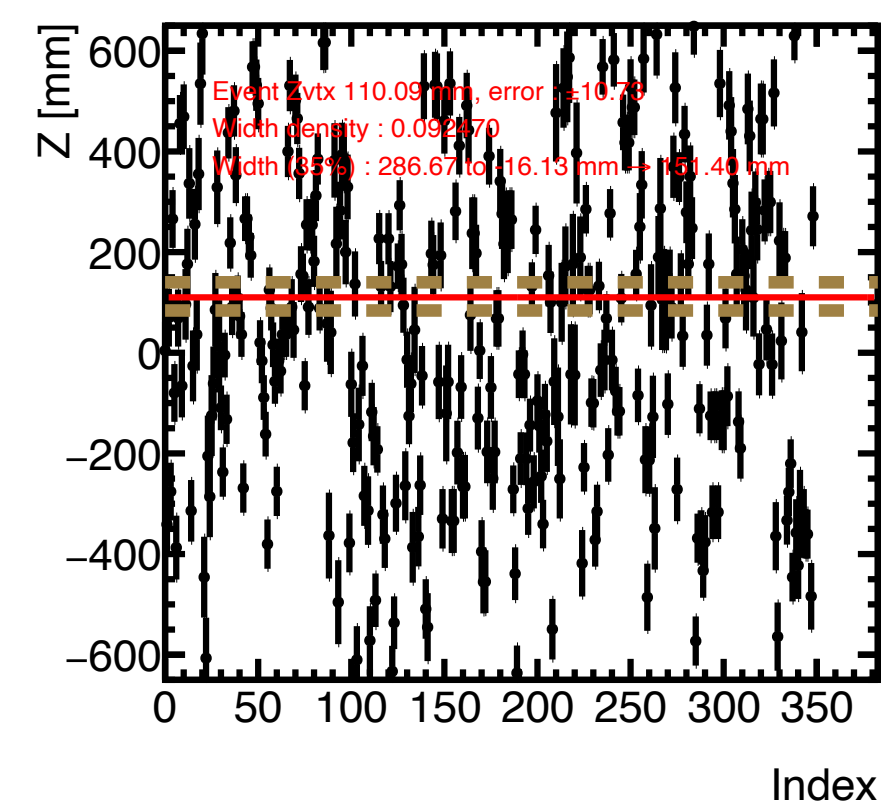
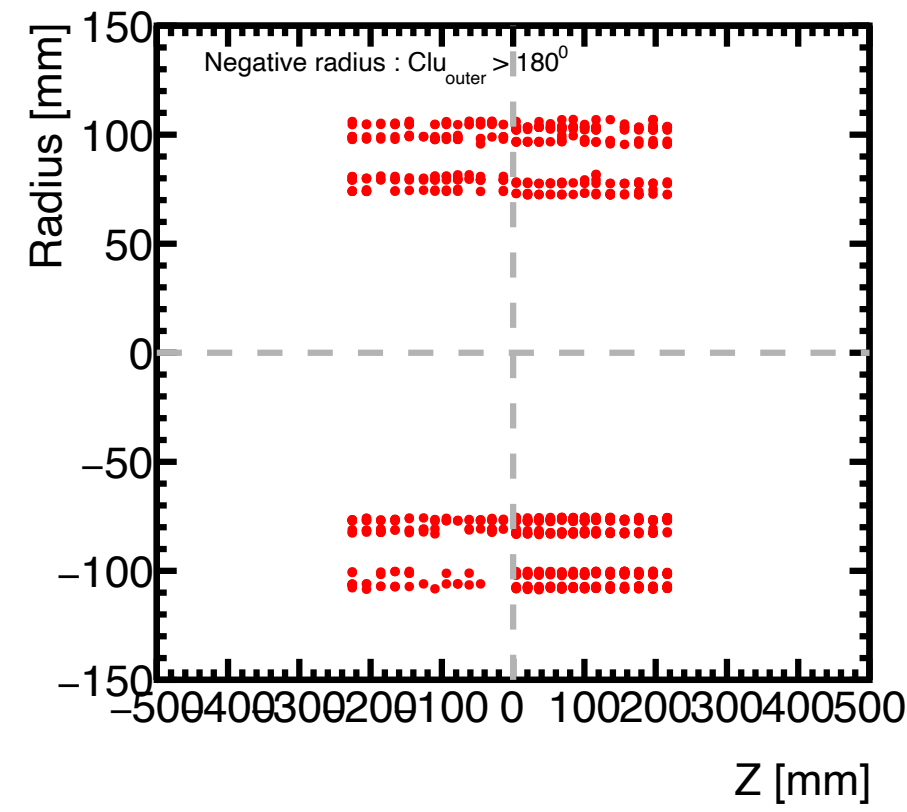
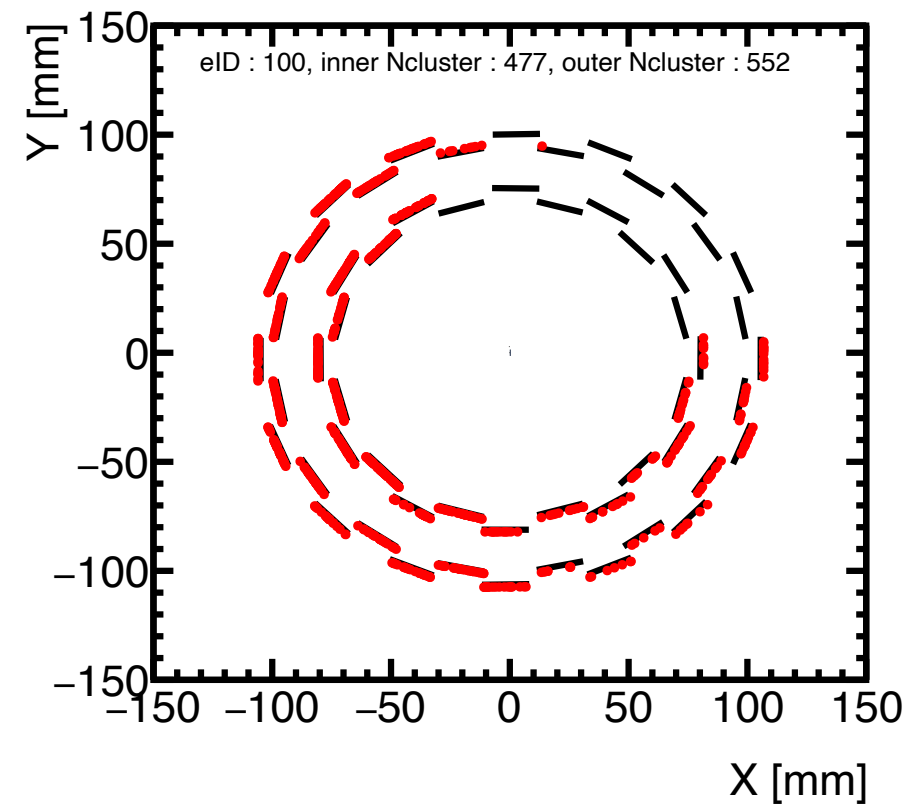
June 5th, 2024
INTT meeting



國立中央大學
National Central University



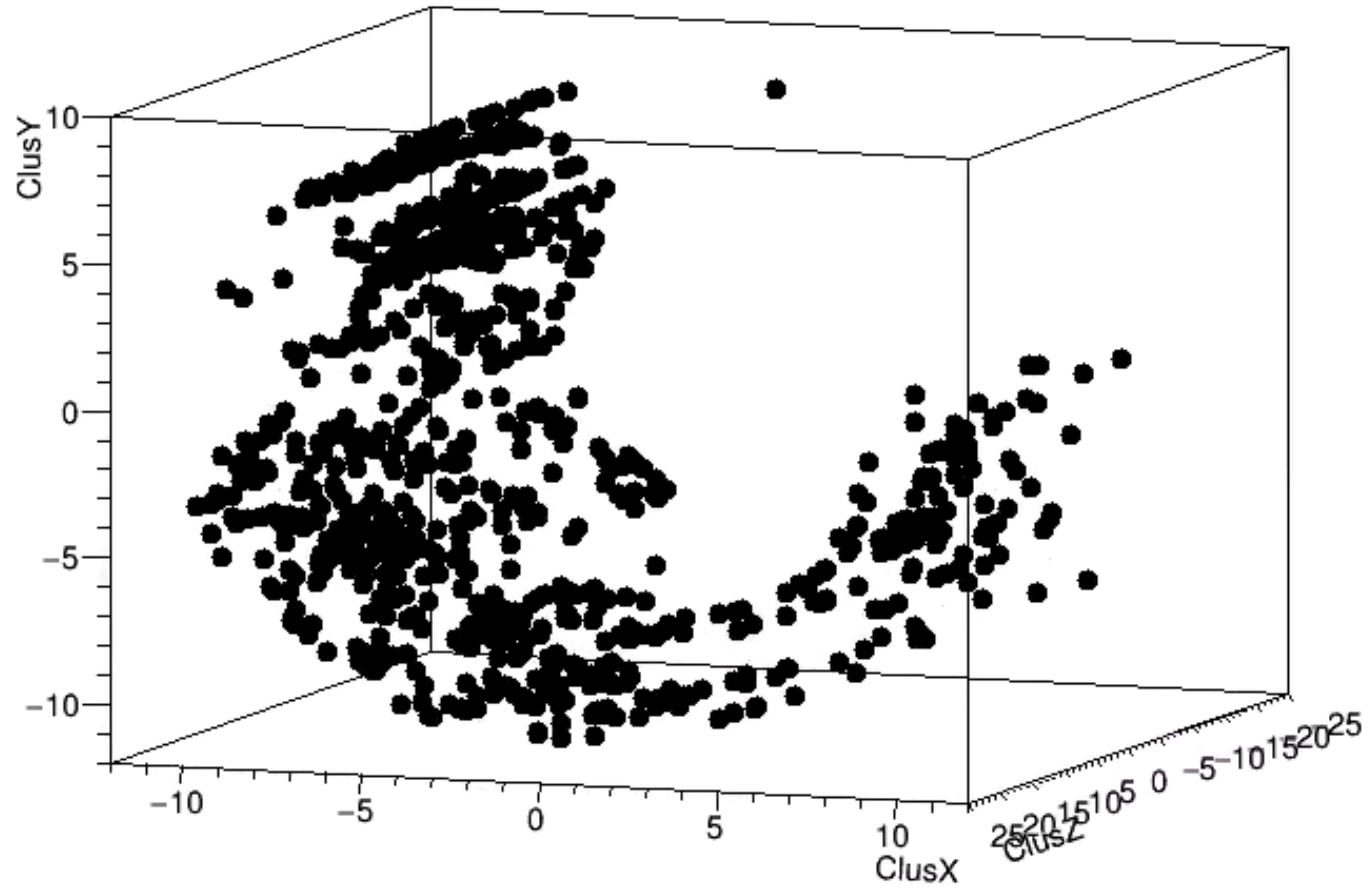
Potential unstable quadrant in data F4A data



The first quadrant of INTT might be unstable sometimes

Potential unstable quadrant in data F4A data

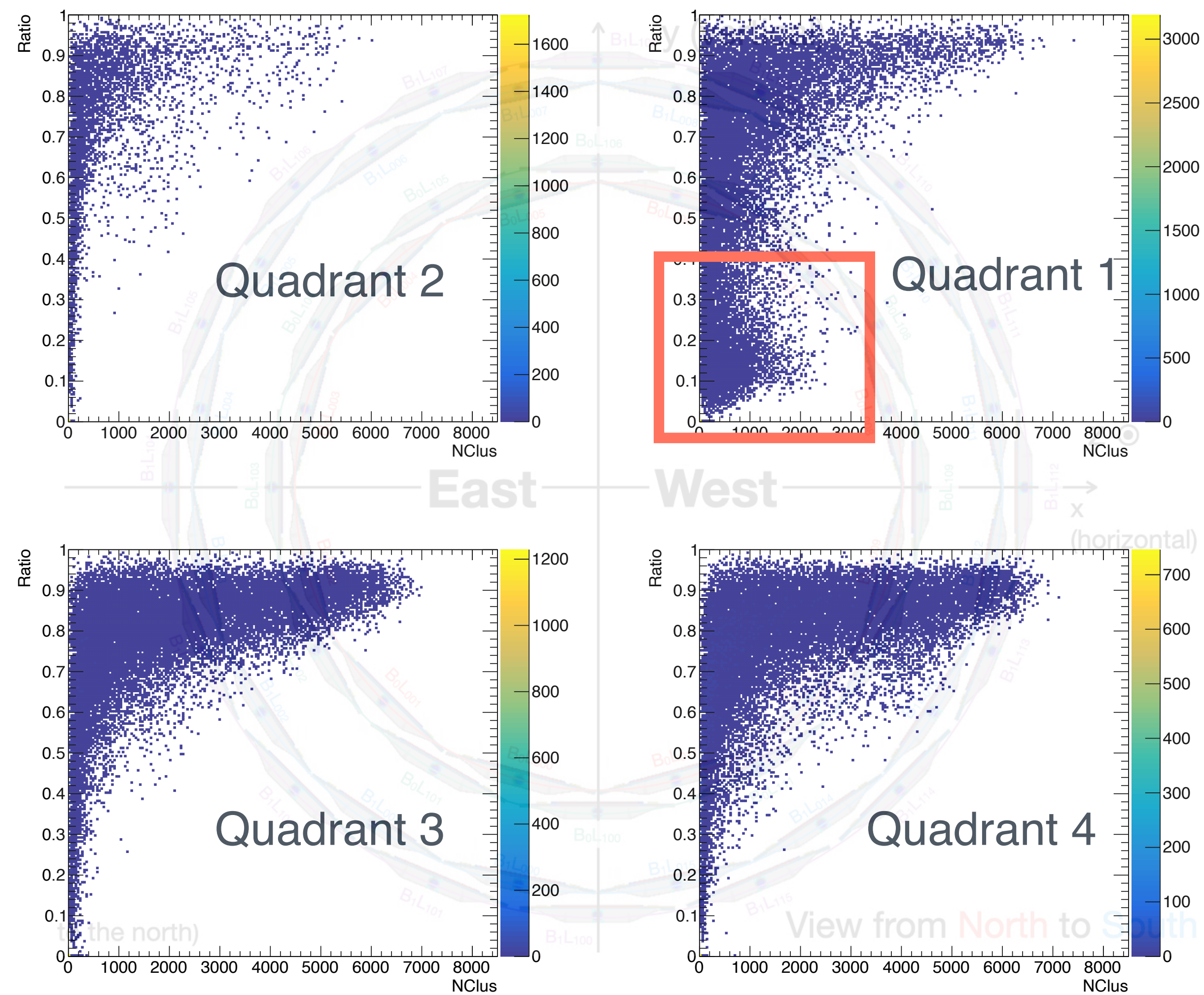
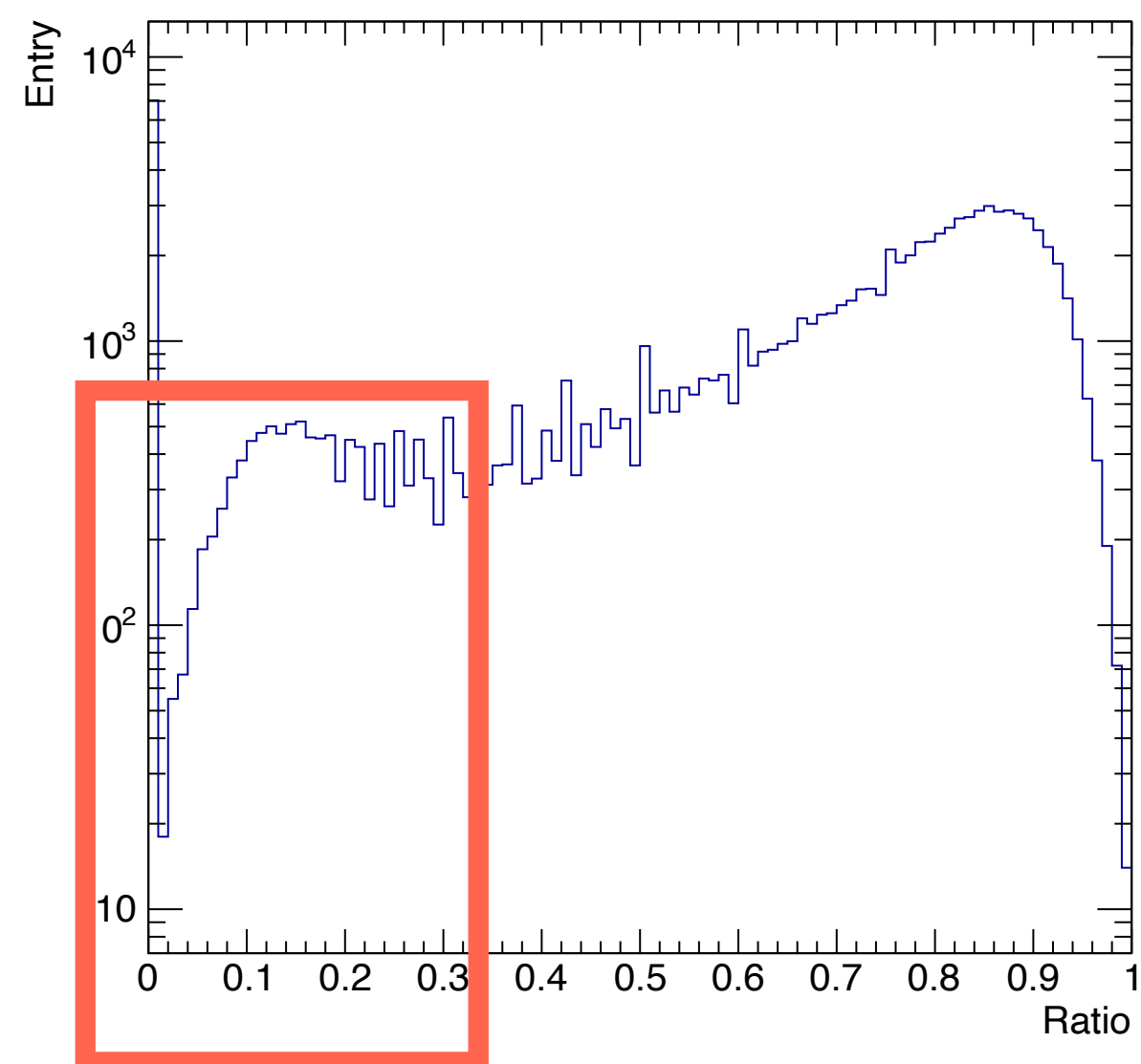
ClusY:ClusX:ClusZ {ClusAdc > 35 && ClusPhiSize < 5 && INTT_BCO == 727881271799}



Weird events

F4A data, first 10k events

1. Count NClus for each quadrant (based on the FelixID of the cluster)
2. Find the one with smallest number of clusters
3. The ratio : the one / avg of the rest of three quadrants

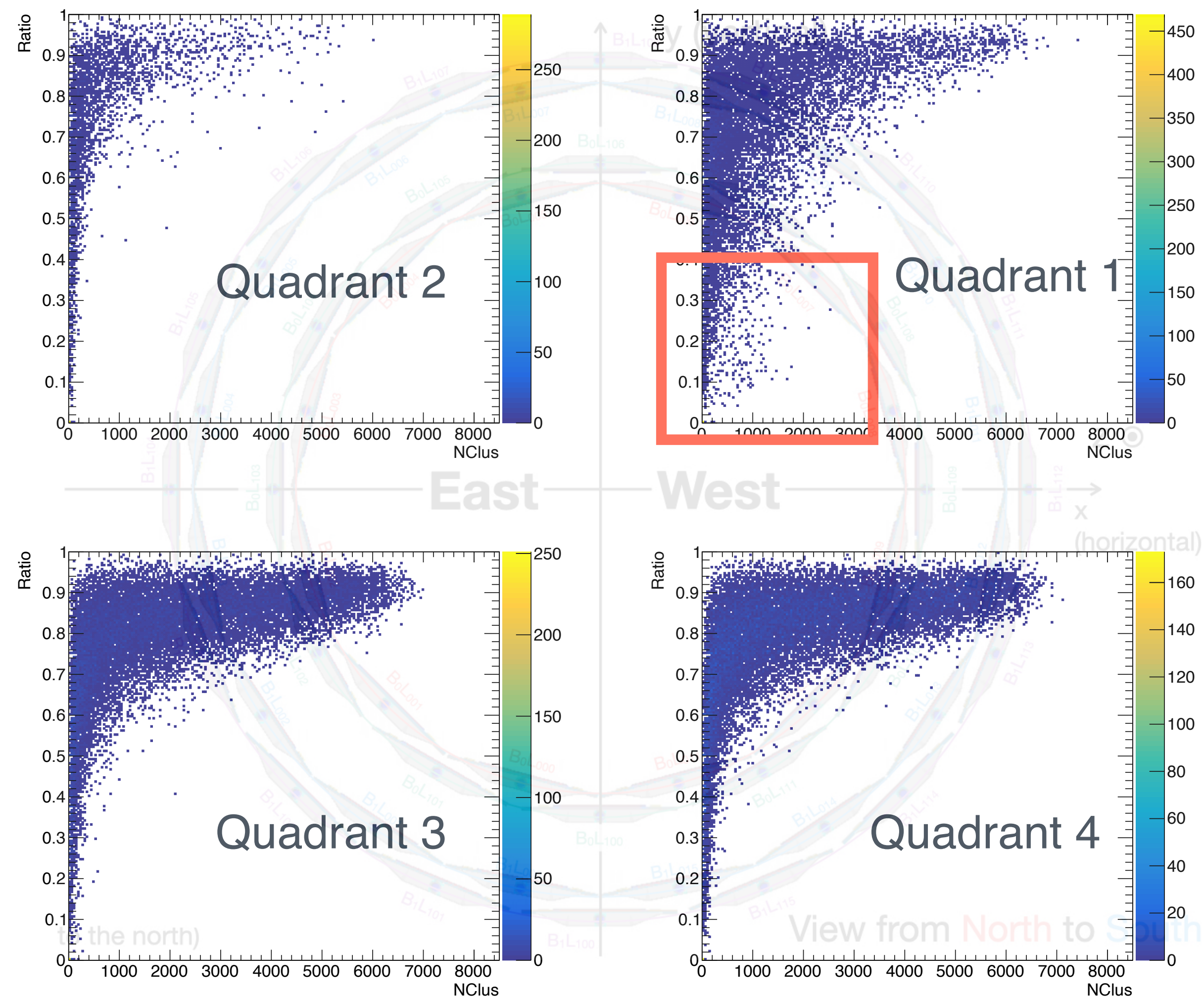
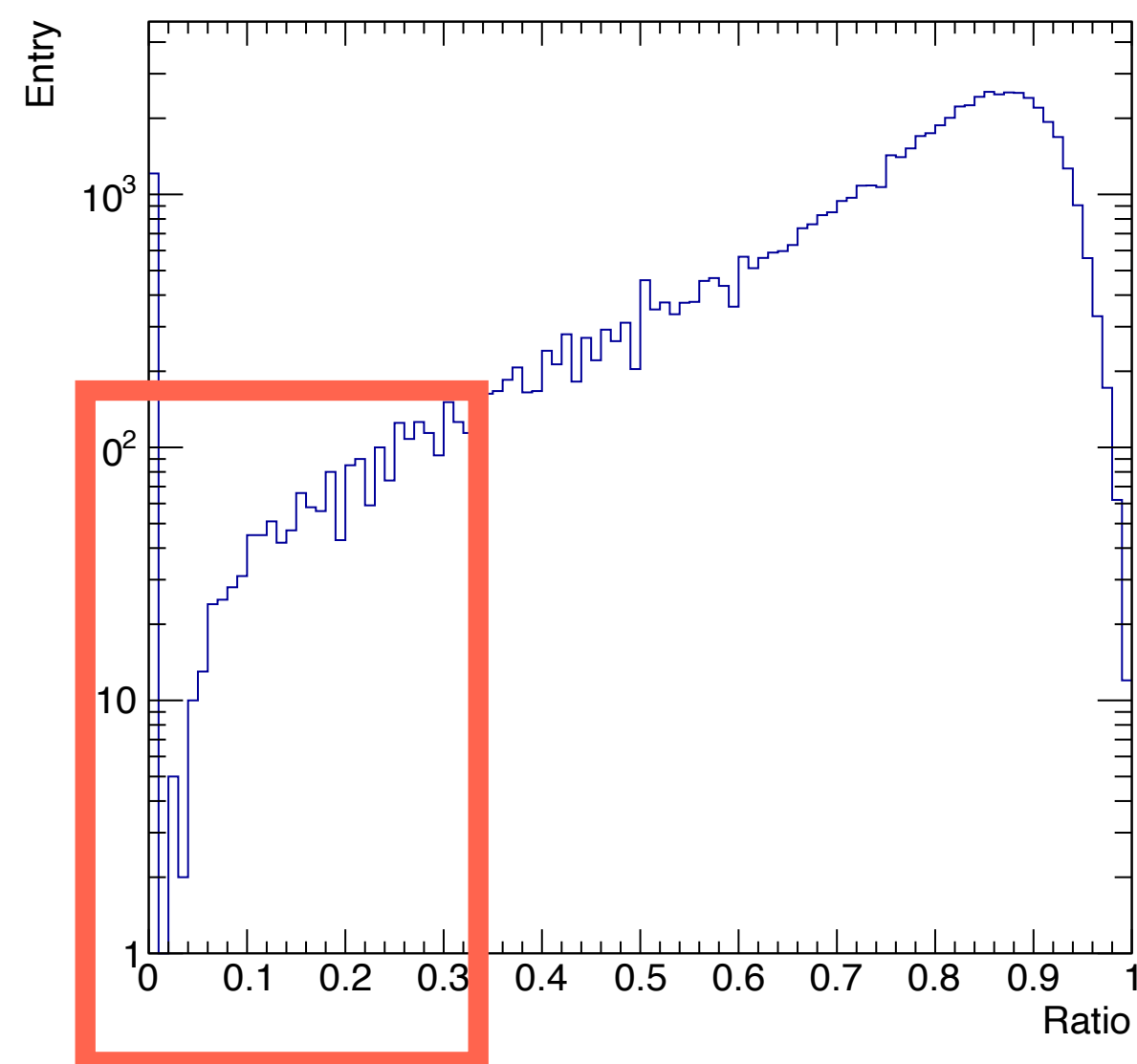


Weird events

F4A data, first 10k events

1. Count NClus for each quadrant (based on the FelixID of the cluster)
2. Find the one with smallest value
3. The ratio : the one / avg of the rest of three quadrants

```
is_min_bias_wozdc == 1  
MBD_centrality == MBD_centrality  
MBD_z_vtx == MBD_z_vtx  
-50 cm <= MBD_z_vtx <= 10
```

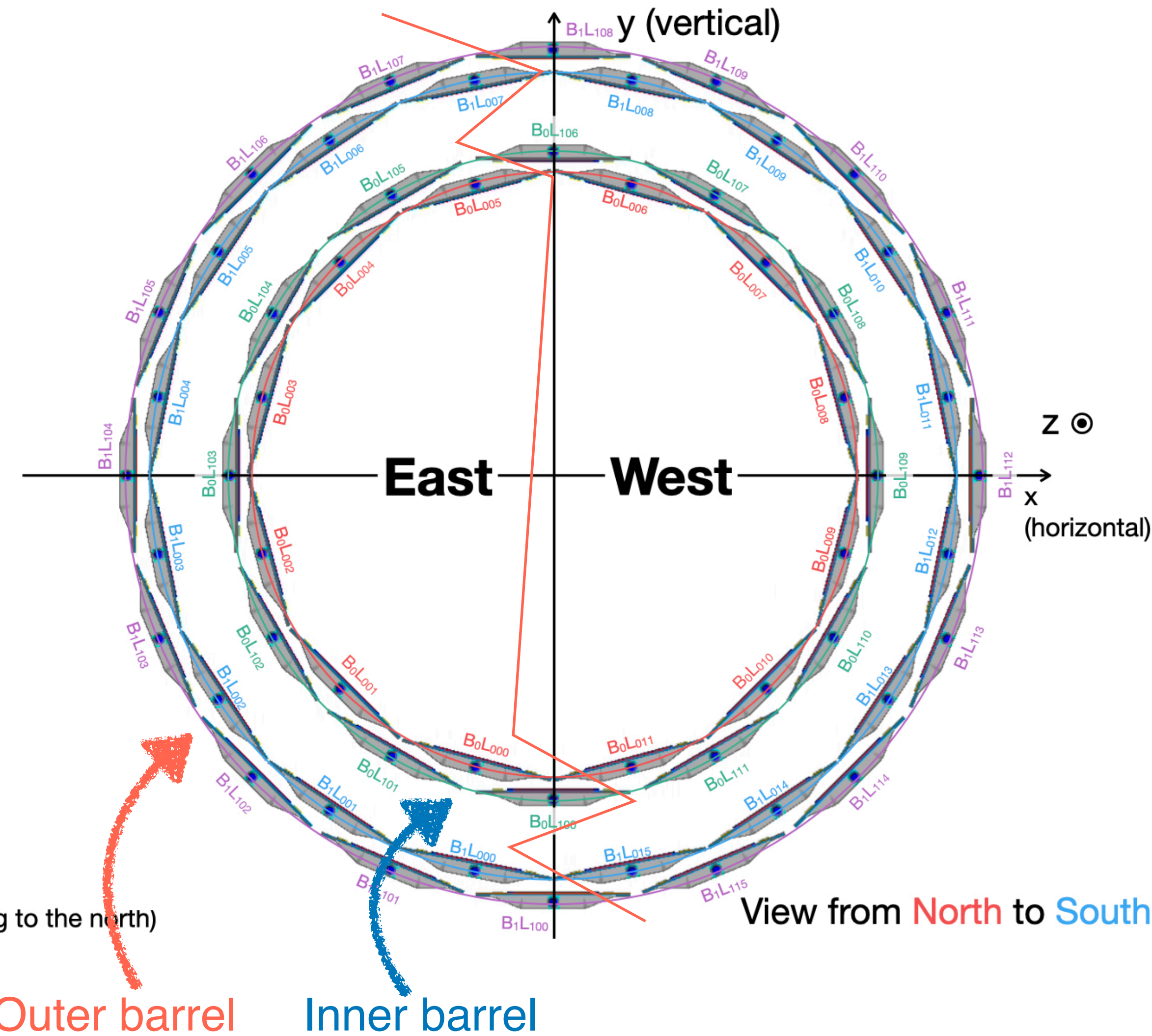
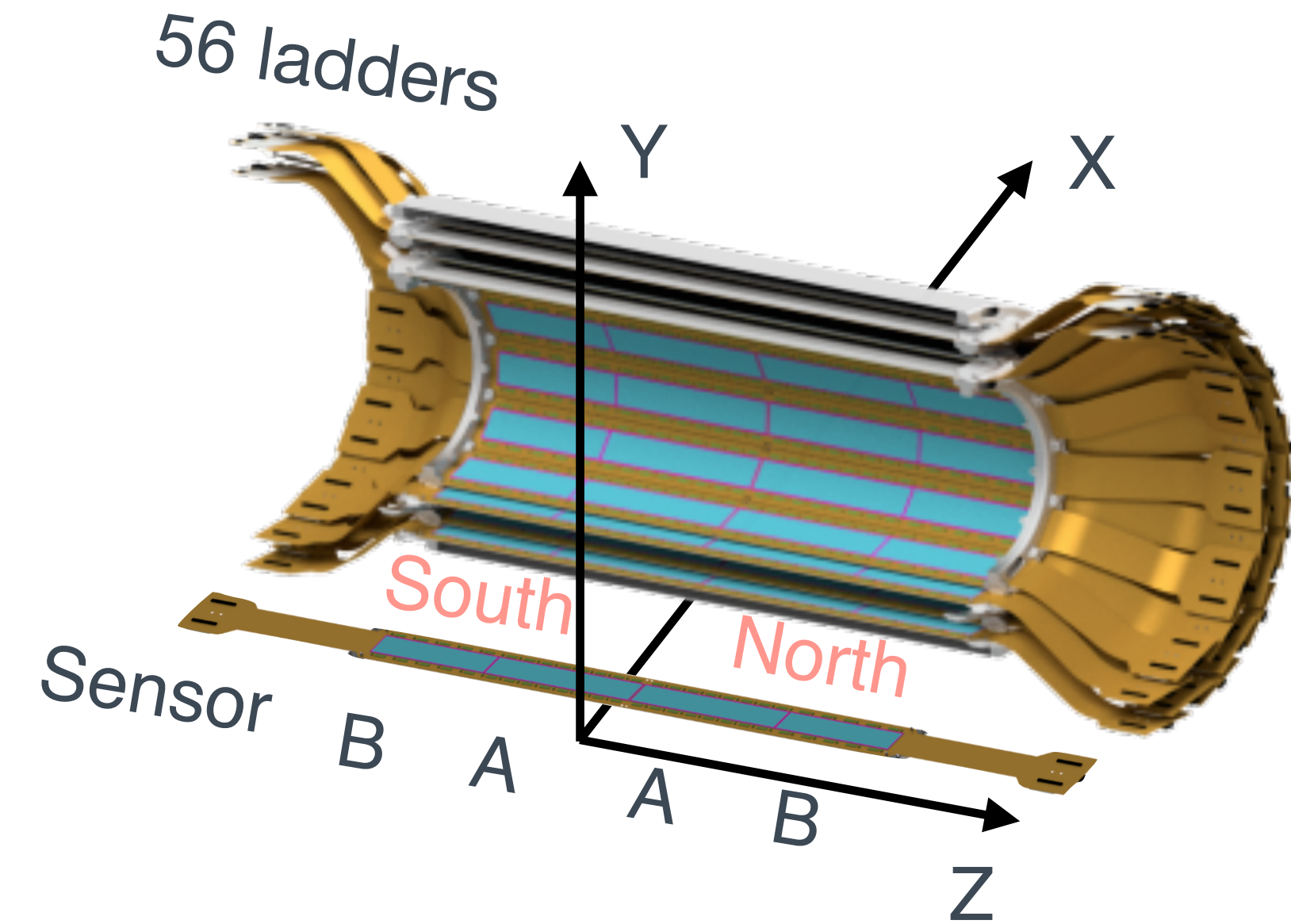


MBD relevant cuts seem to be able to mitigate the issue

Back up

INTT: 2 sensors X 2 sides of half-ladders X 56 ladders = 224 sensors

Notation: $B_xL_yz_z$
 x: Barrel ID (0 for inner or 1 for outer)
 y: Layer ID (0 for inner or 1 for outer)
 zz: Ladder ID (from 0 to 15)



Axis (Right-handed coordinate)
 x-axis: $\vec{y} \times \vec{z}$
 y-axis: Vertically upward direction
 z-axis: The blue beam direction (pointing to the north)

View from North to South