

# LSU

LOUISIANA STATE UNIVERSITY



## Status of WireCell Setup and Latest Image-Clustering Files

SBND Wirecell Meeting

Prabhjot Singh, 30 April 2026

# Structure of Overall Progress

- High-level summary of progress
- Current status
- Next steps

# Overall Progress

- I am trying to create latest wirecell reconstructed files using latest wirecell code version
- Current status:
  - Local wirecell setup successful
  - Tested and validated my imaging-clustering results with Haiwang's results
  - Produced latest wirecell reconstructed file
  - Generated latest file using **active3view+masked1view**
  - Hand scanned bunch of clusters to find reportable features

# Overall Progress

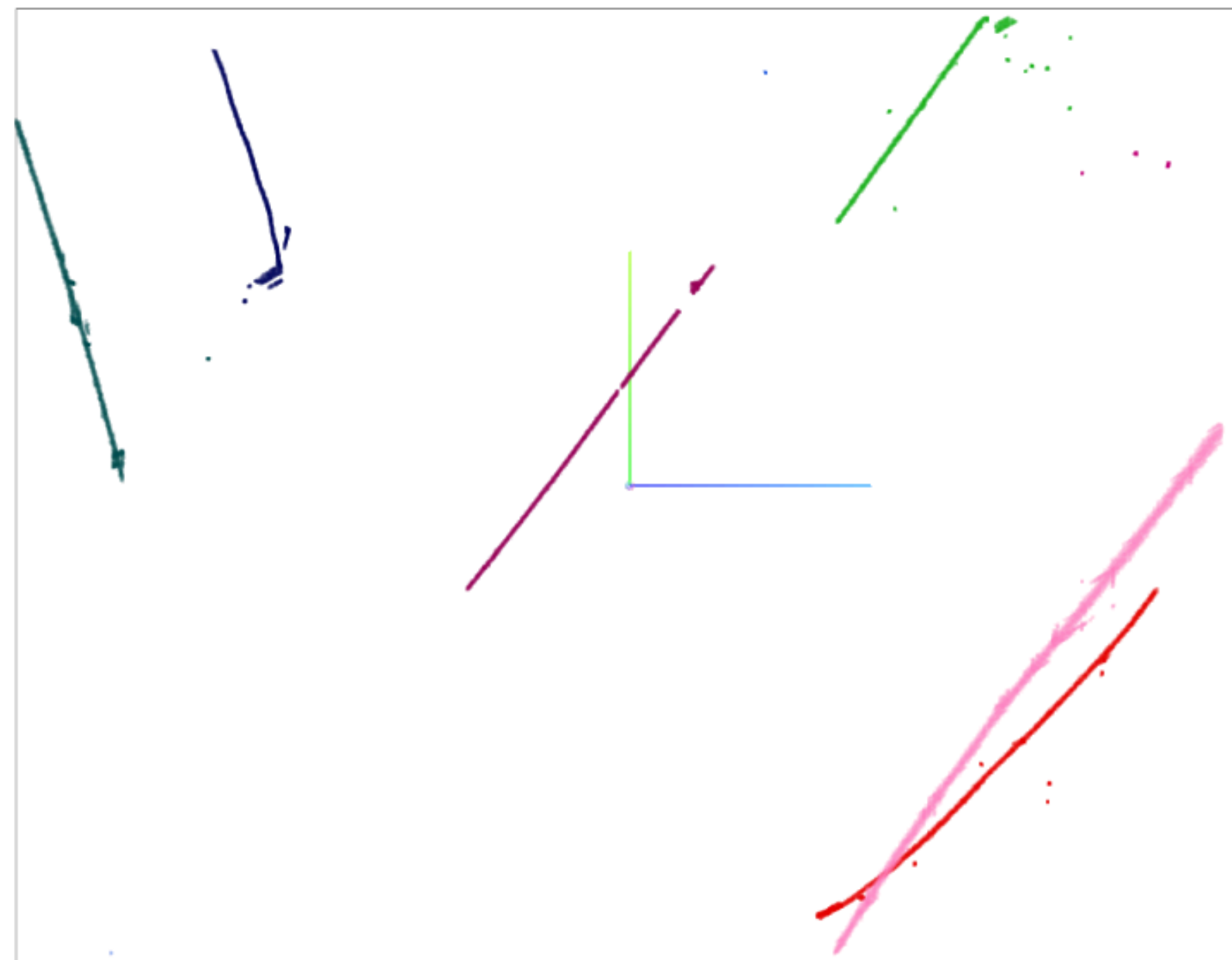
- Next steps:
  - Run new clusters through my cluster-evaluation tools
  - Check and report overall evaluation performance
  - Move to charge-light matching clusters
  - Again handscan clusters and run through evaluation tools
  - Move from **active3view+masked1view** to **active2view+masked2view** version of clusters
  - The **active2view+masked2view** fills gap between clusters but can produce ghost tracks

# Current Status

- Local wirecell setup successful
- Tested and validated my imaging-clustering results with Haiwang's results

Haiwang

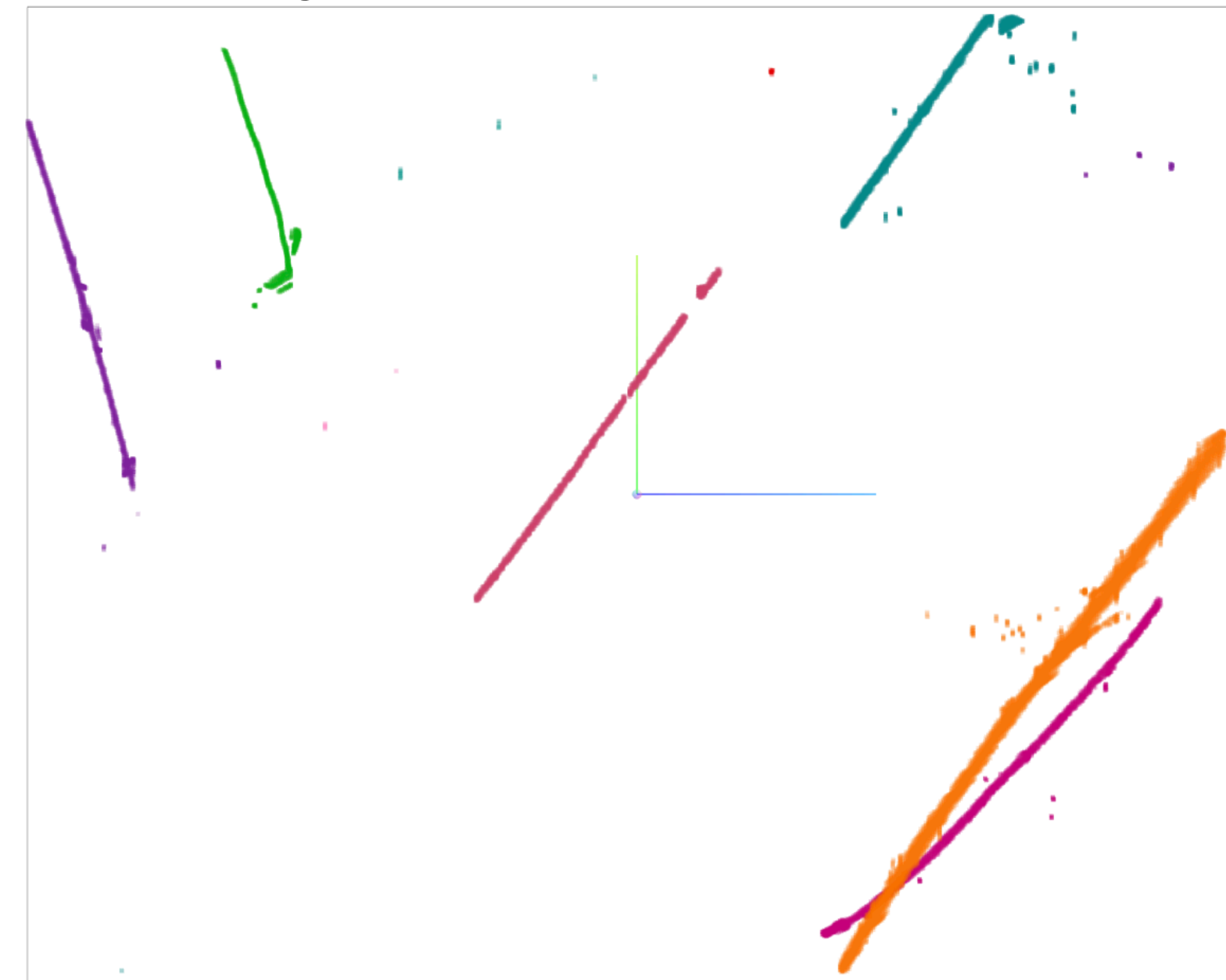
Event 0



<https://www.phy.bnl.gov/twister/bee/set/f7aa161f-6827-4d8f-97cc-a73ee8d4b07a/event/0/>

Prabhjot

Event 3



<https://www.phy.bnl.gov/twister/bee/set/5a7275a2-8f19-40e0-9d5f-25d70839bb04/event/3/>

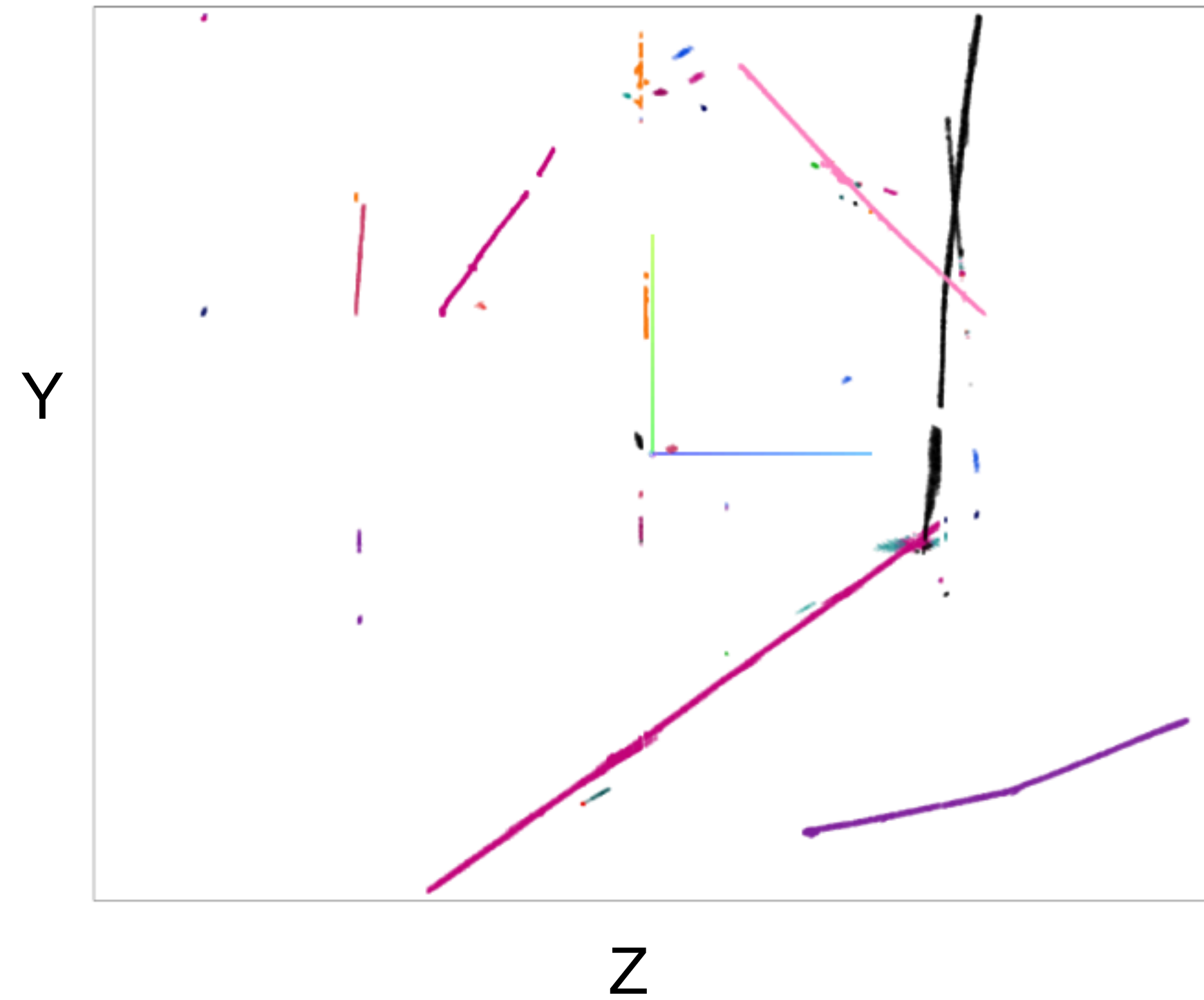
Same results

# More Handscans

[Link Event 0](#)

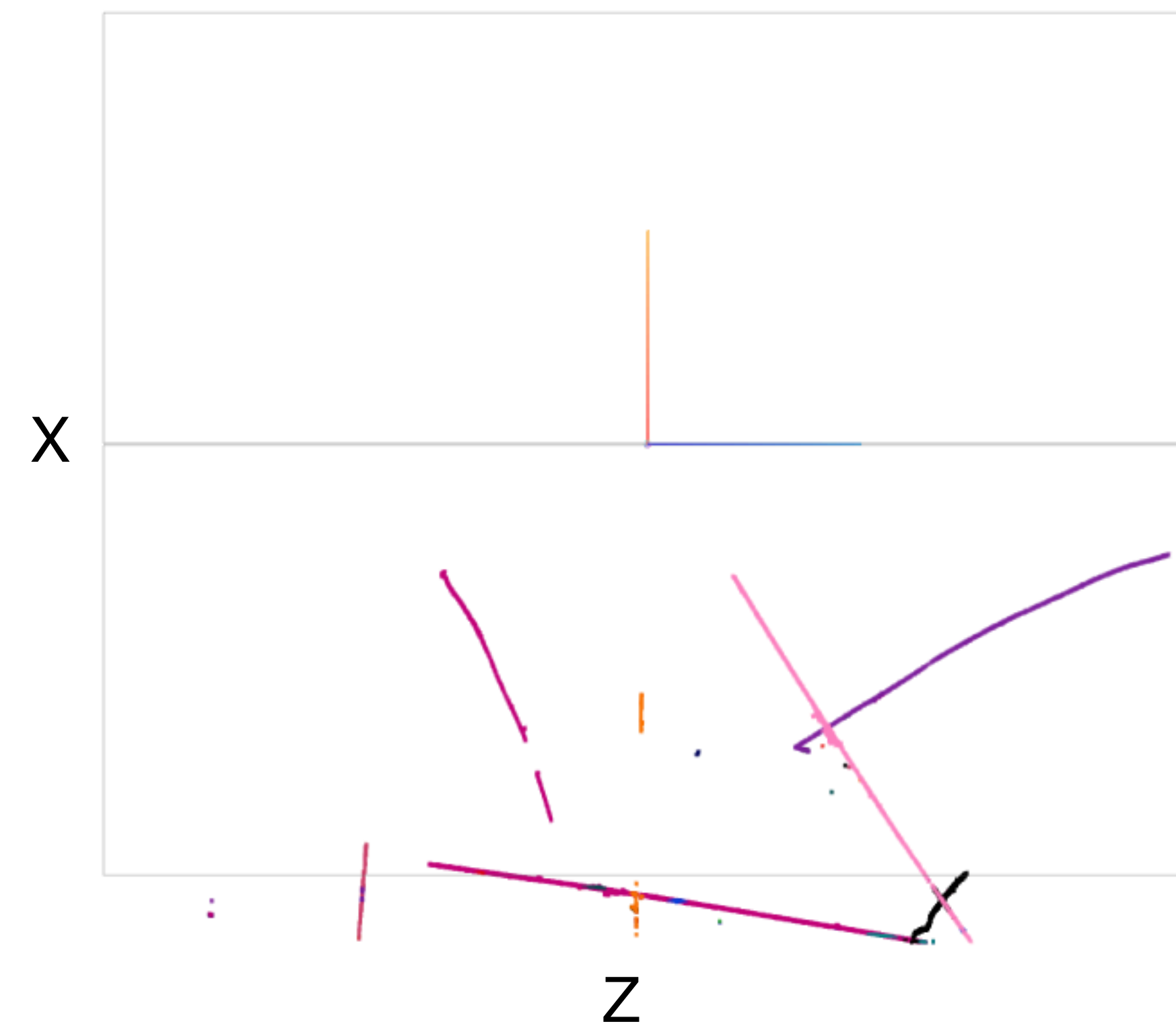
X-view

APA 0



Y-view

APA 1

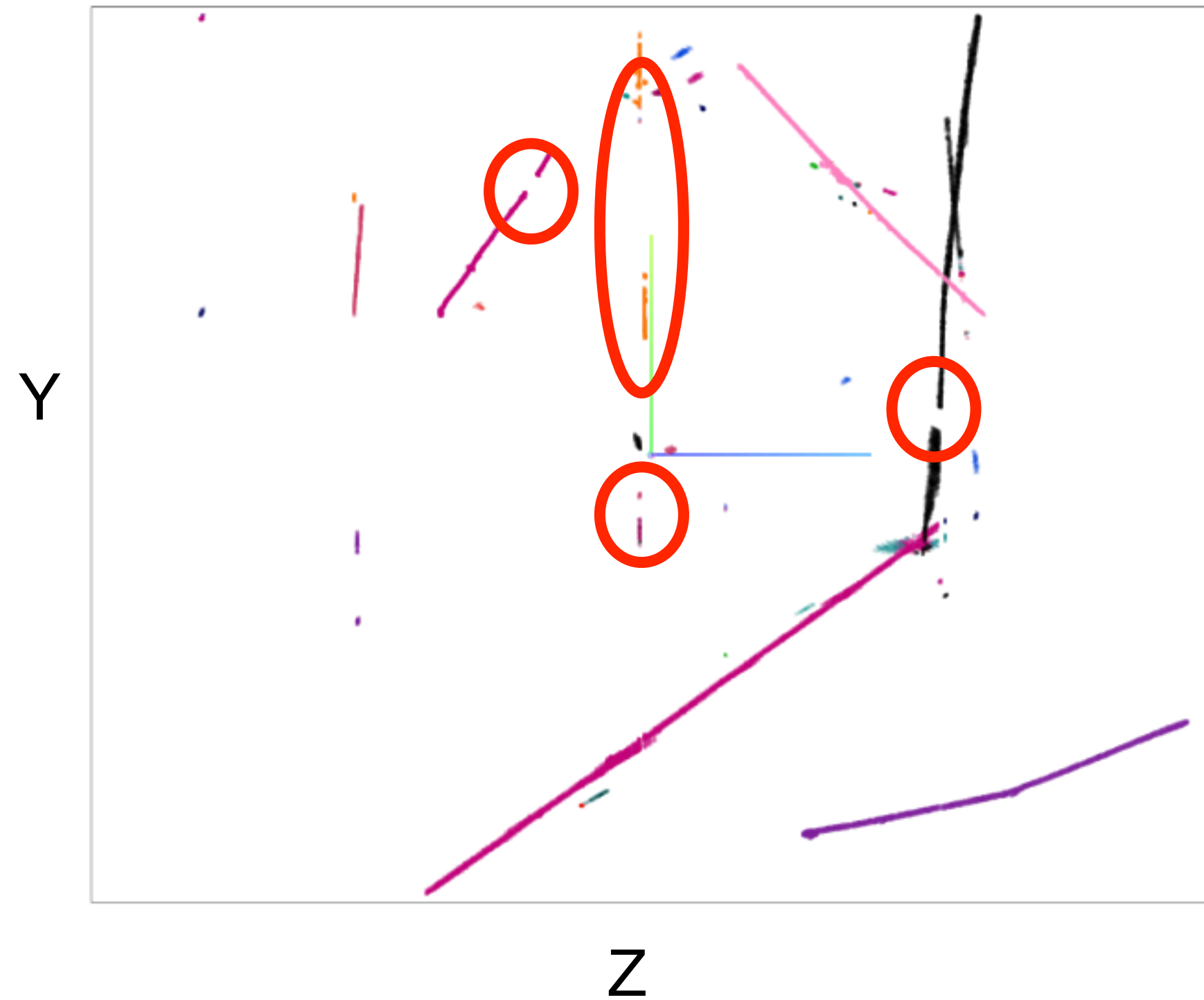


# More Handscans

[Link Event 0](#)

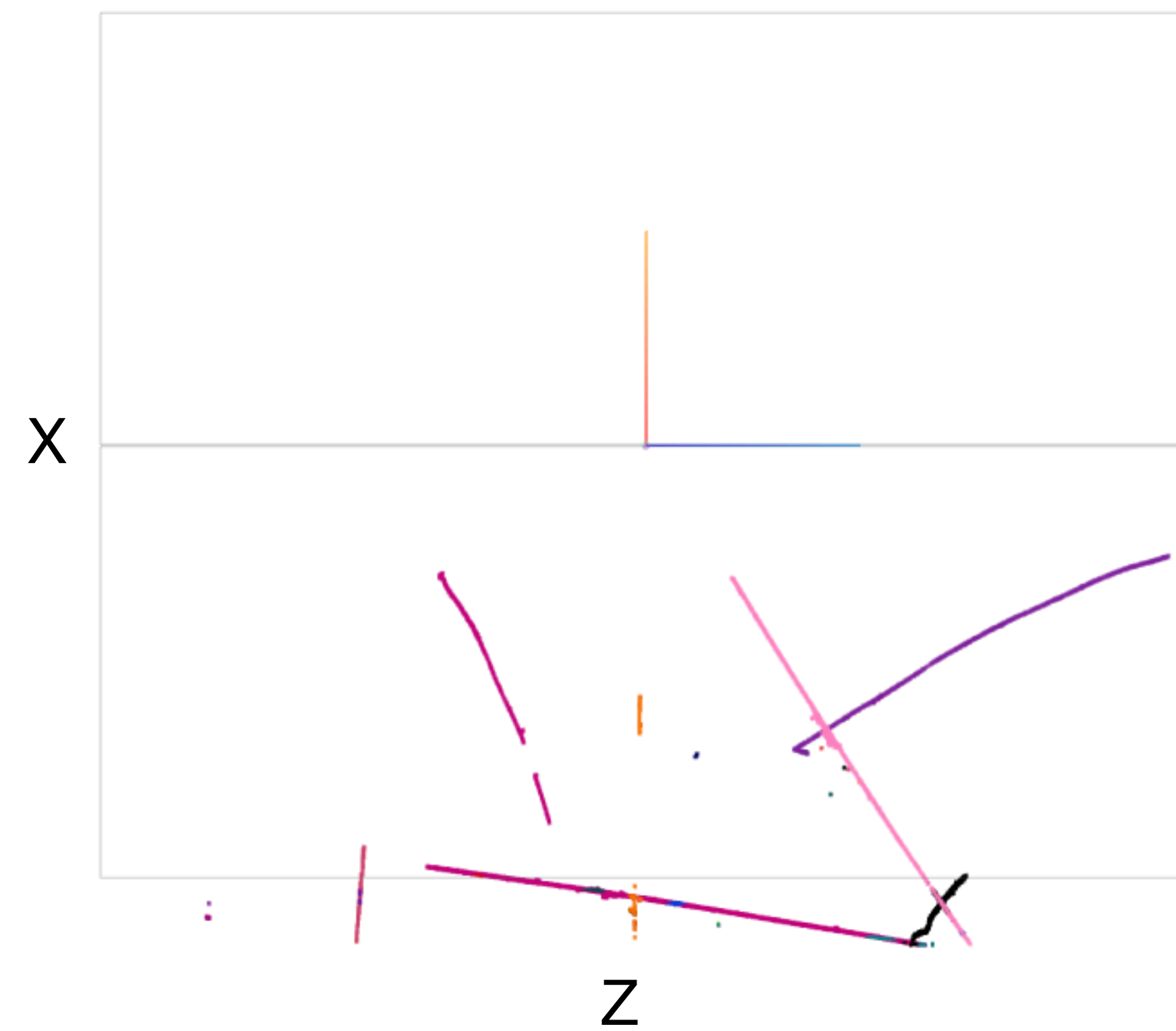
X-view

APA 0



Y-view

APA 1



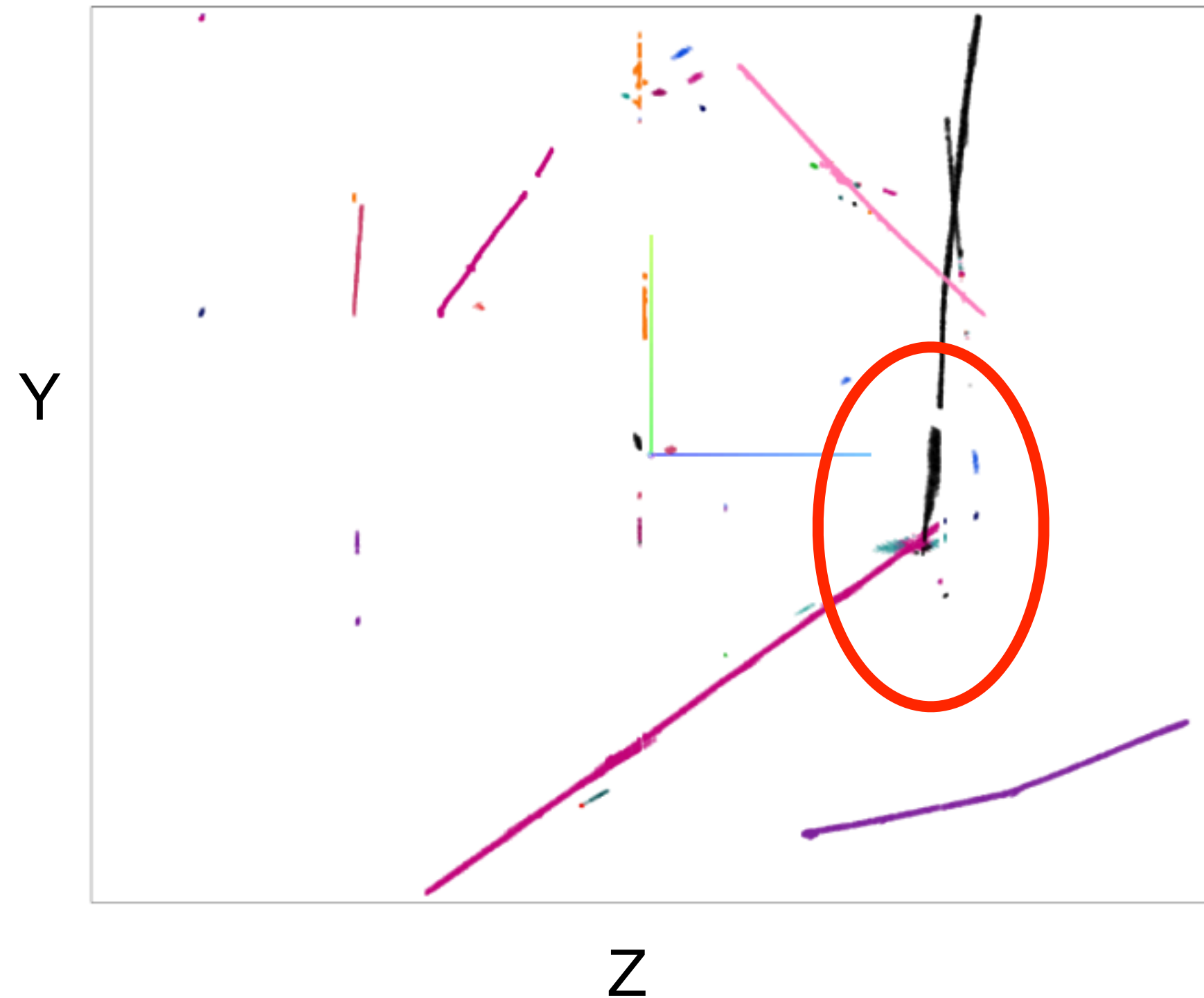
- Several gaps in tracks

# More Handscans

[Link Event 0](#)

X-view

APA 0



Y-view

APA 1



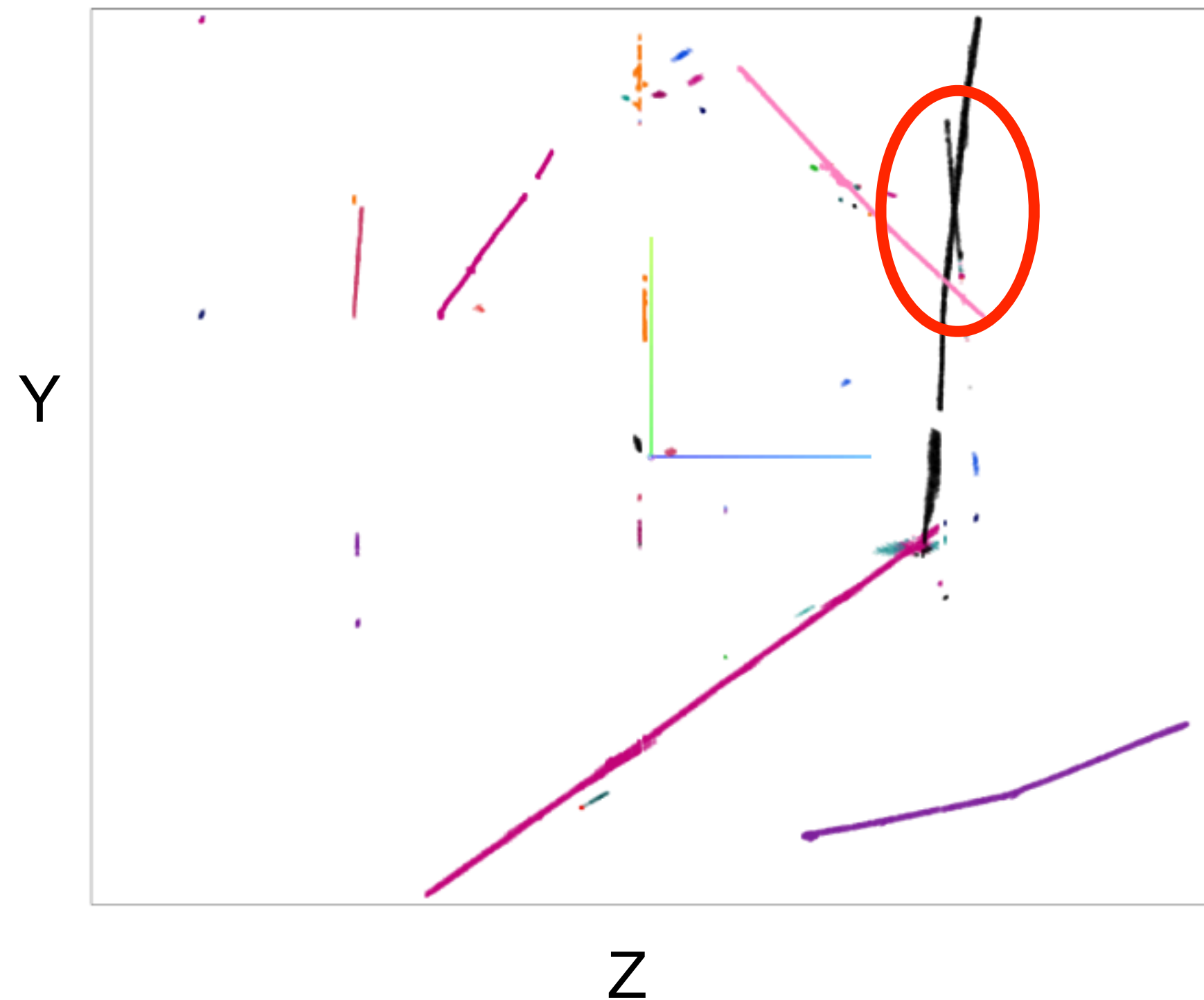
- Final states from single neutrino interaction but are reconstructed as different clusters as indicated by different colors

# More Handscans

[Link Event 0](#)

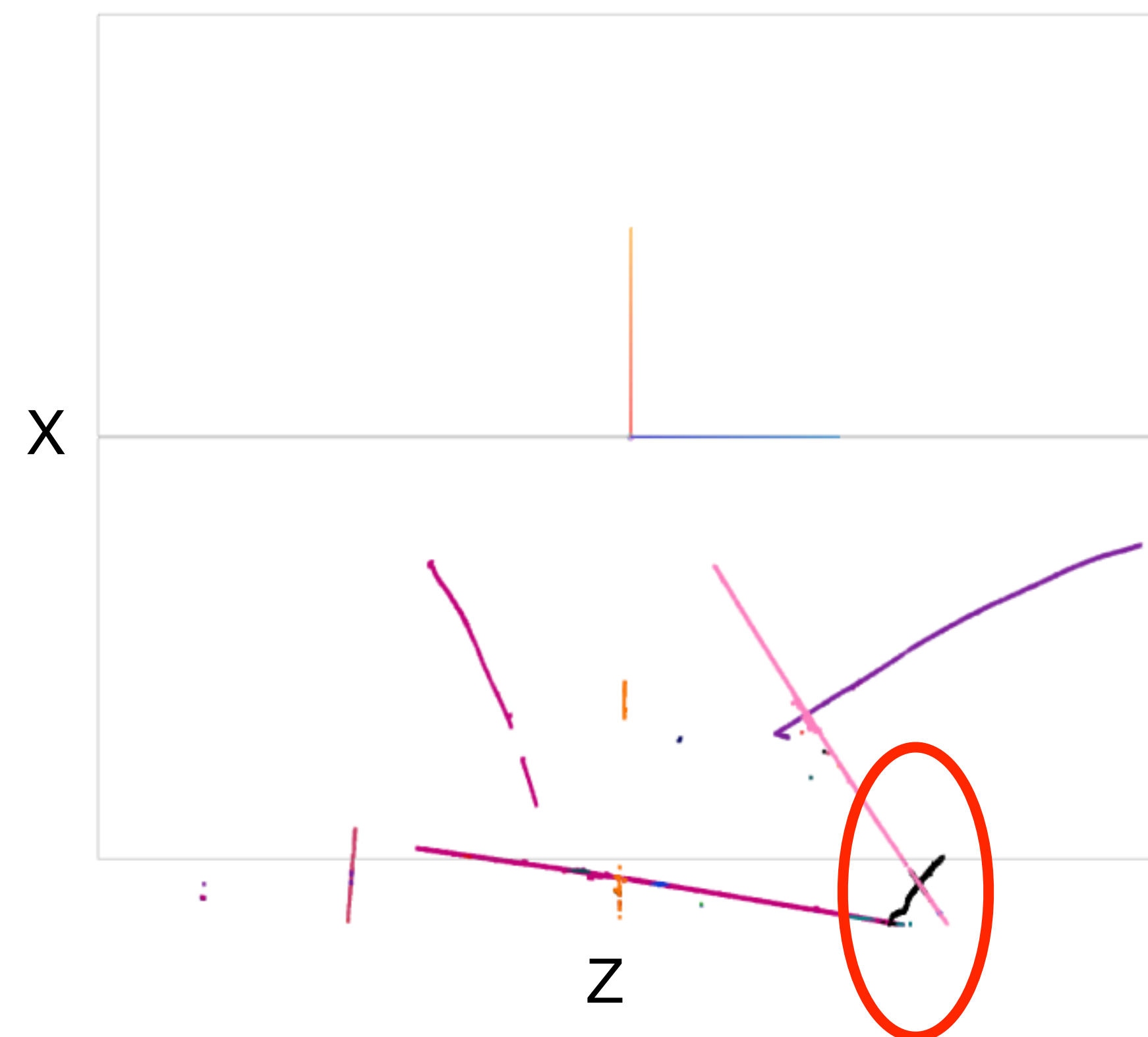
X-view

APA 0



Y-view

APA 1



- Portion of one track projected on another track

# More Handscans

[Link Event 0](#)

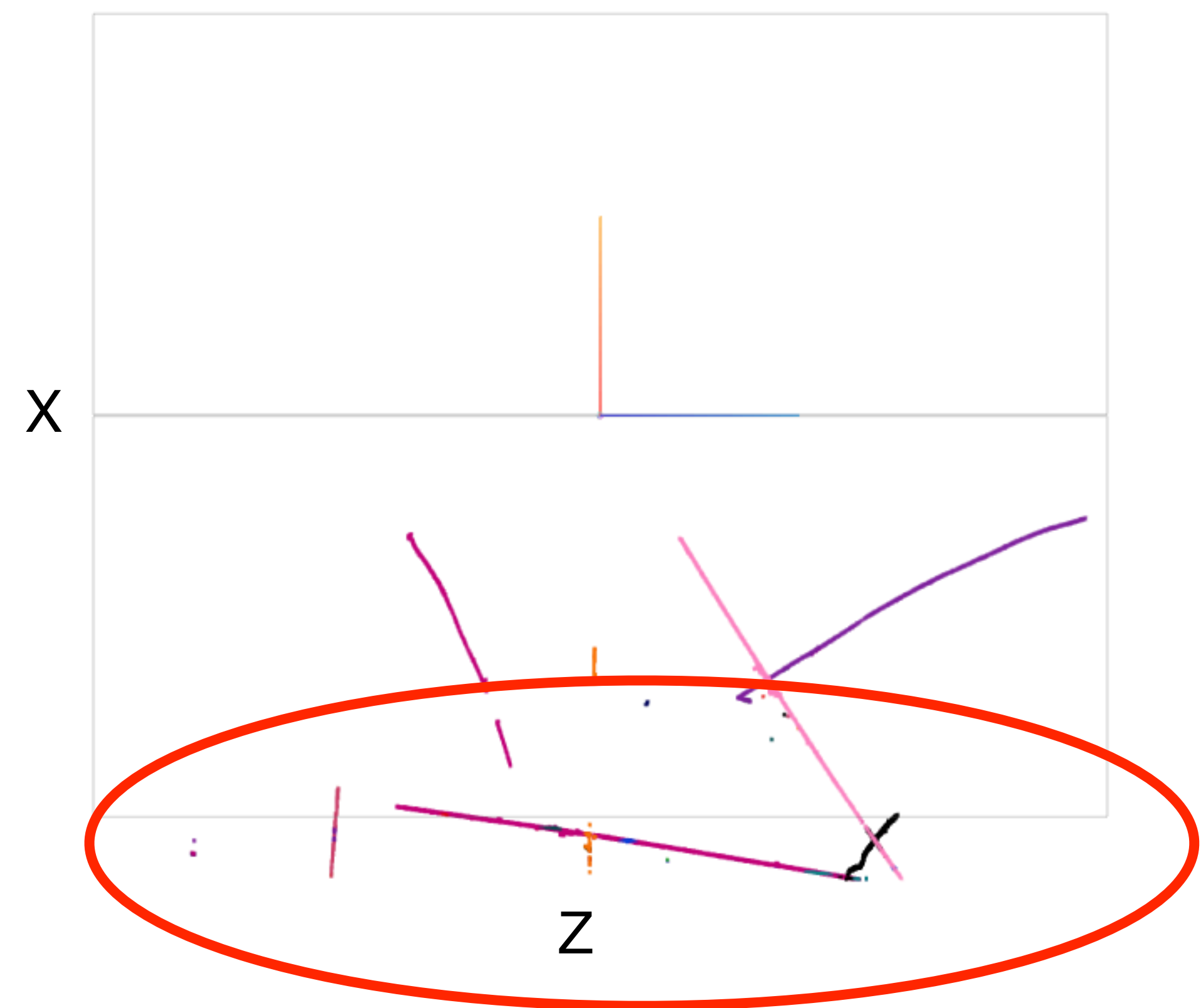
X-view

APA 0



Y-view

APA 1



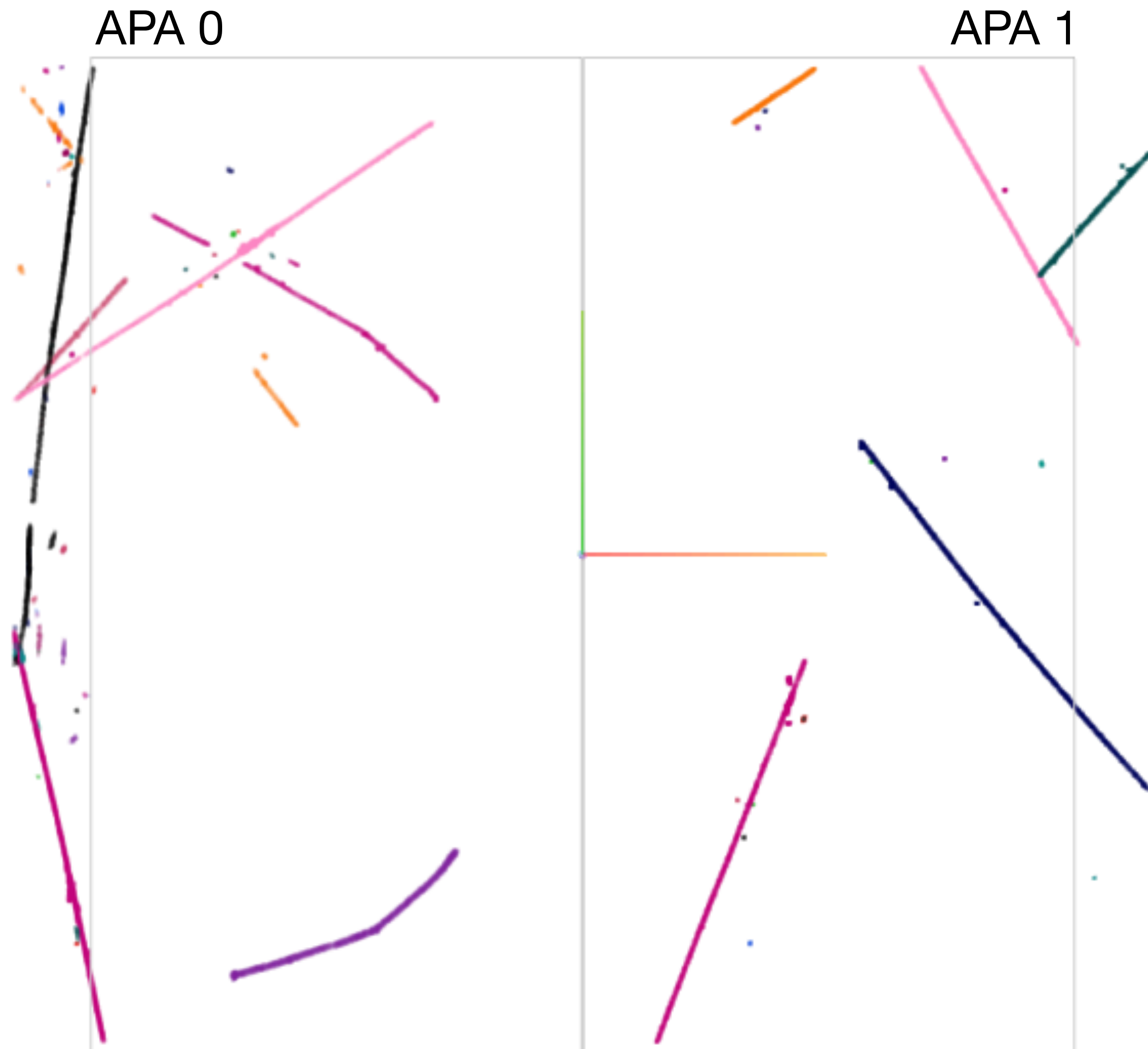
- T0 is shifted as there is no charge-light matching correction which will correct the T0

# More Handscans

- Seems track gaps and blip activities are mostly in APA0
- APA1 looks better than APA0

[Link Event 0](#)

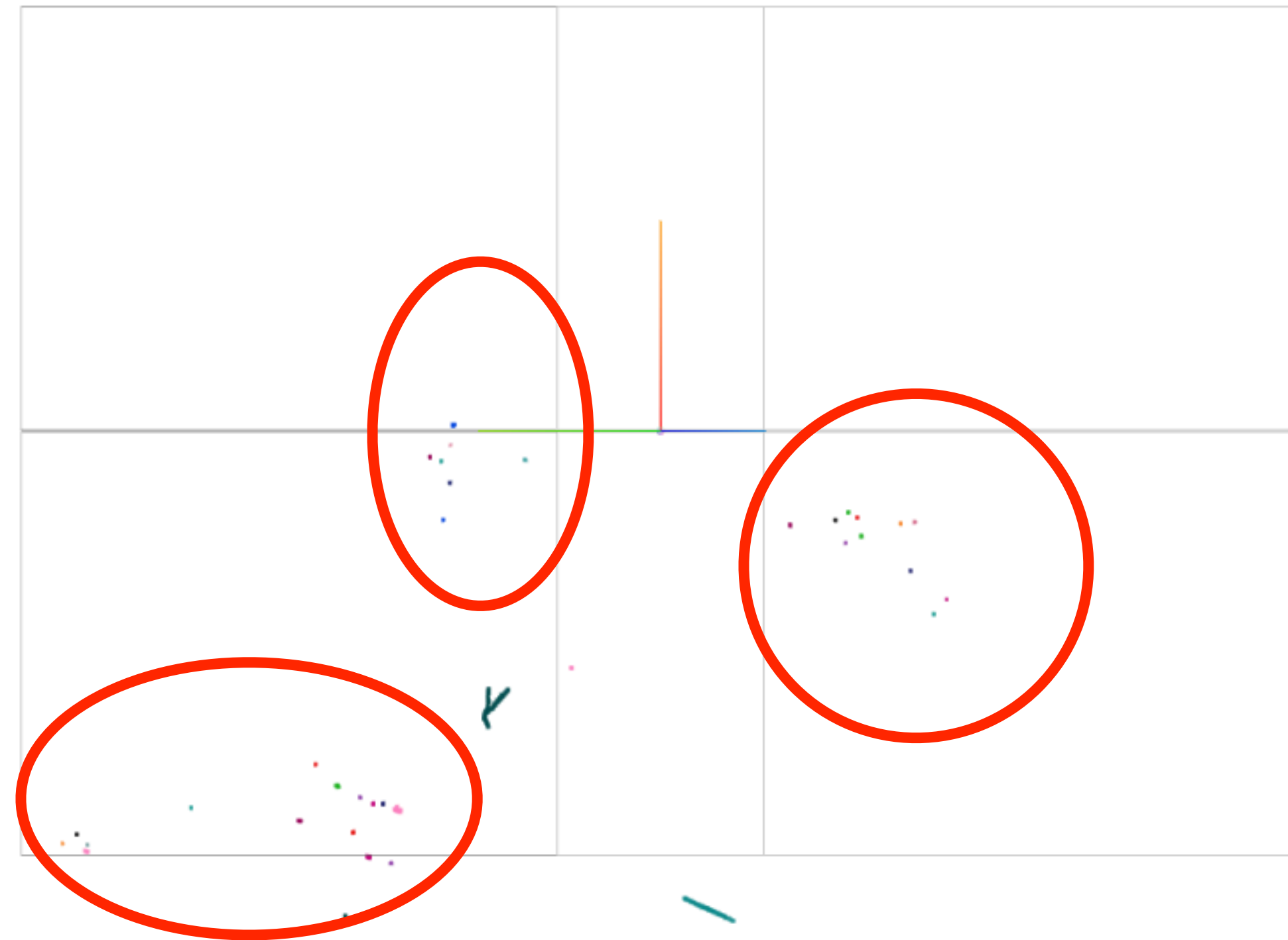
Z-view



# More Handscans

[Link Event 1](#)

APA 0

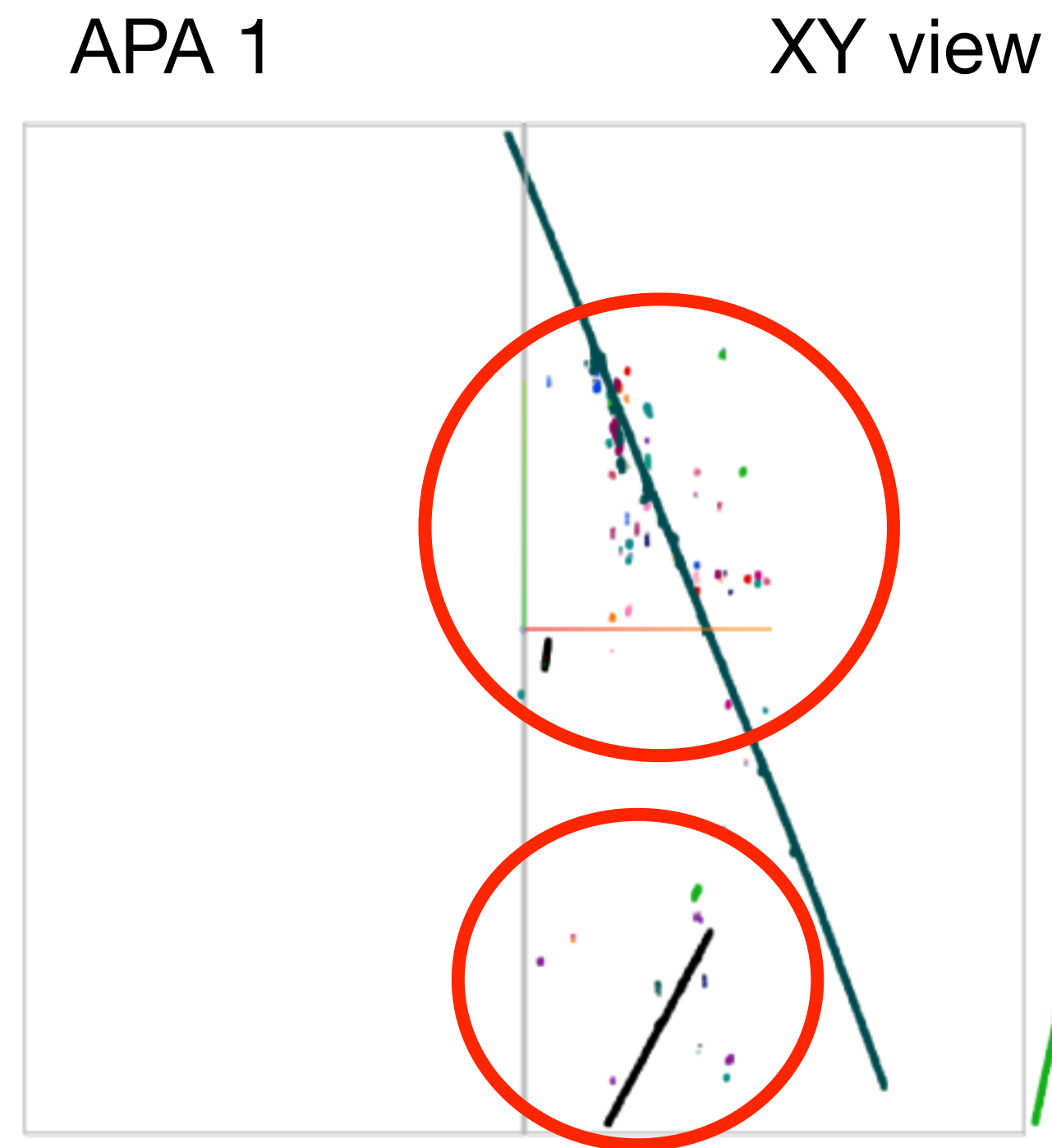
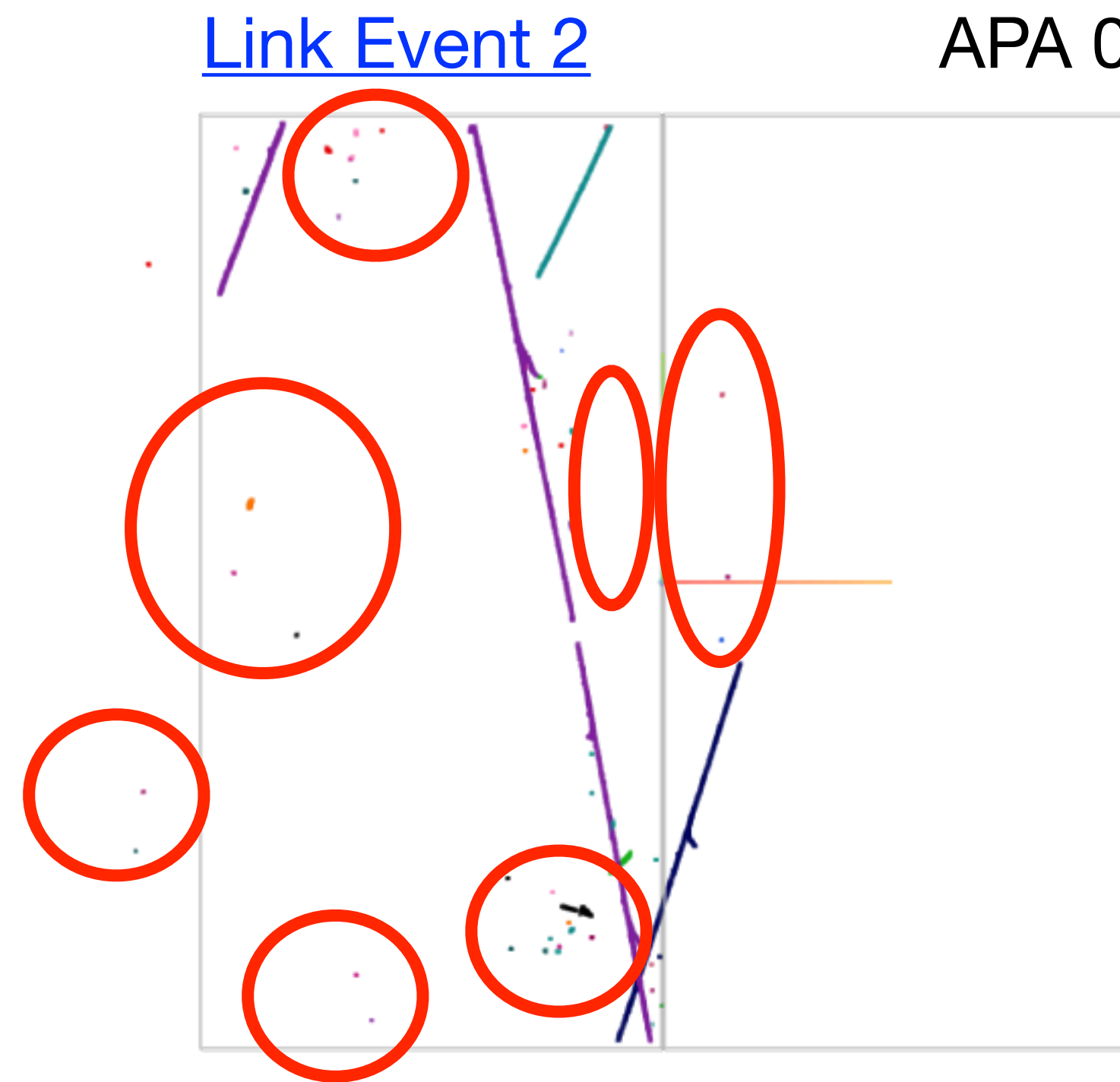


APA 1



- No visible reconstruction issues though several blip activities

# More Handscans



- Lots of blip activities

# More Handscans

- Currently scanning more events to identify more possible issues

# Next Steps

- Continue scanning more and more clusters
- Run new clusters through my cluster-evaluation tools
- Check and report overall evaluation performance
- Move to charge-light matching clusters
- Again handscan clusters and run through evaluation tools
- Move from **active3view+masked1view** to **active2view+masked2view** version of clusters
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# Backup