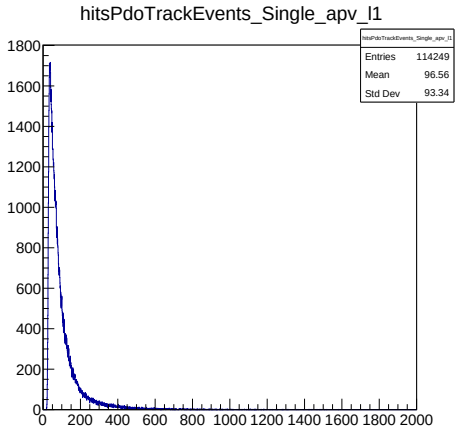
Straw analysis status, *[2022-12-29 Thu]*

Straw TB team

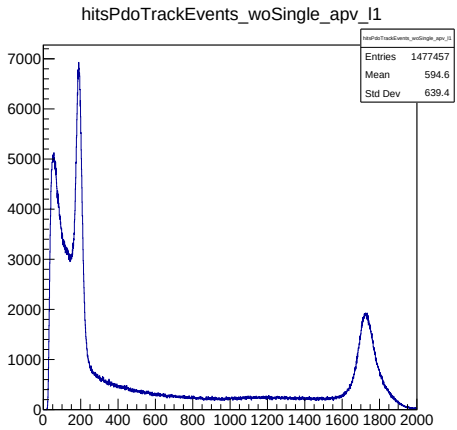
December 29, 2022

Single - non-single hit pdo, July TB

July TB, Single hit pdo



July TB, Non-single hit pdo

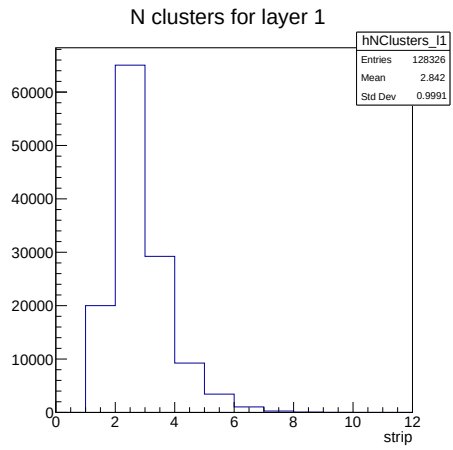


Observation

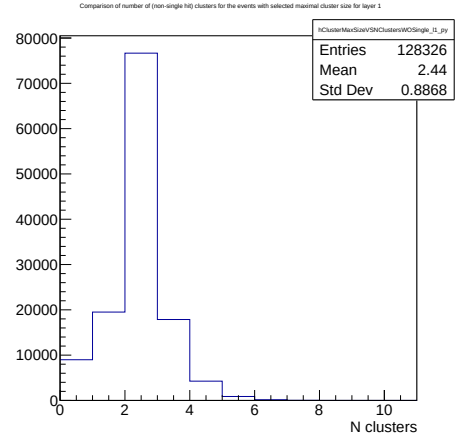
Seems, not a noise

N clusters, July TB

N clusters in event, layer 1



N clusters in event, layer 1, without single hits

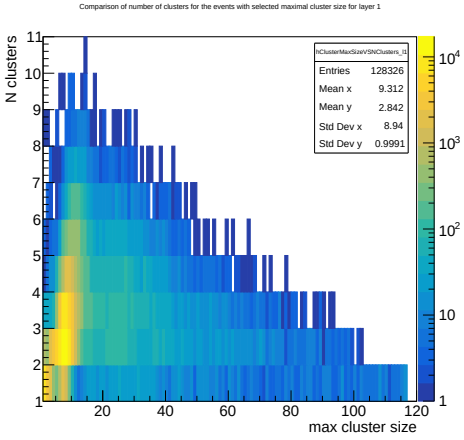


Observation

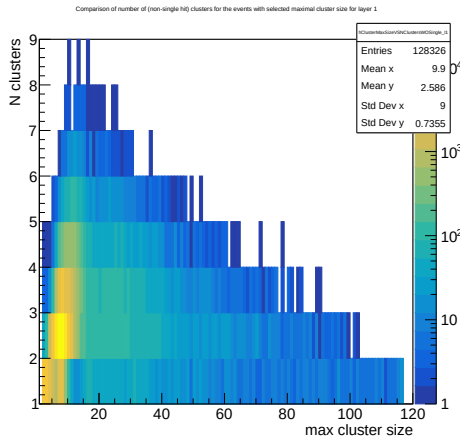
Seems, not a noise

Number of possible clusters in events with given widest cluster, July TB

All clusters

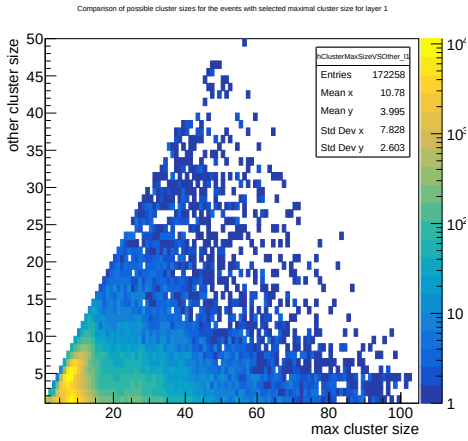


Clusters without singular hits



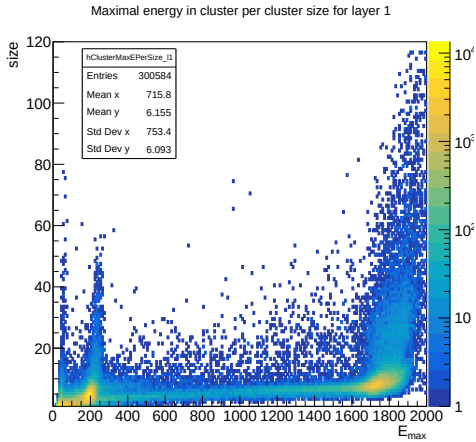
Possible cluster sizes in event with given widest cluster, July TB

Which cluster sizes exists in event with maximal cluster size

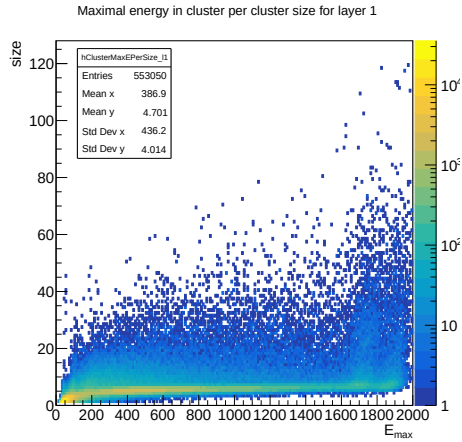


Maximal energy in cluster per cluster size

July TB



April TB

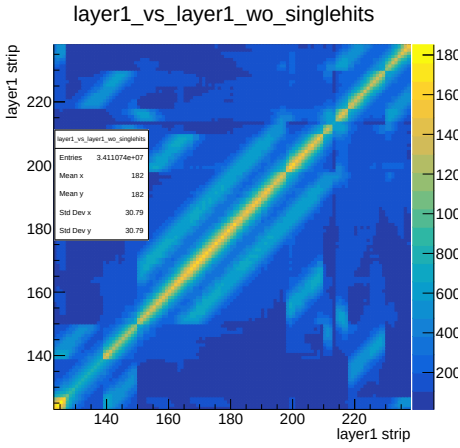


April TB layer has 3 APV, not single

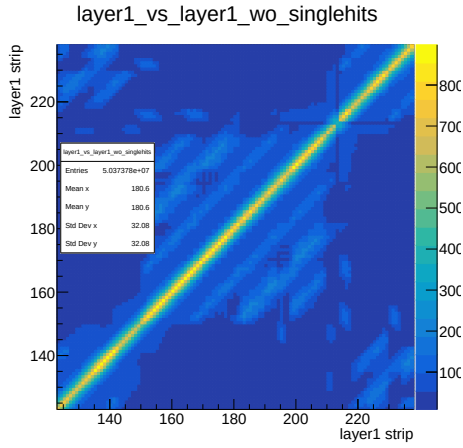
Seems, like this peak in July TB is similar size as signal. Will check.

Diagonal for non-single hits, July and April

July TB



April TB



Observation

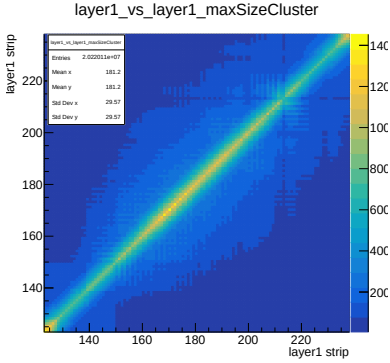
Still looks like mapping problem

Diagonal for hits inside largest cluster only

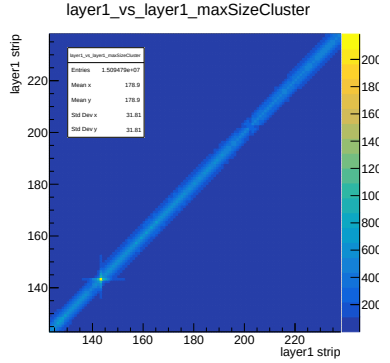
What done:

Taken only cluster with largest number of hits, checked the same "diagonal" histogram for hits in cluster

July TB



April TB



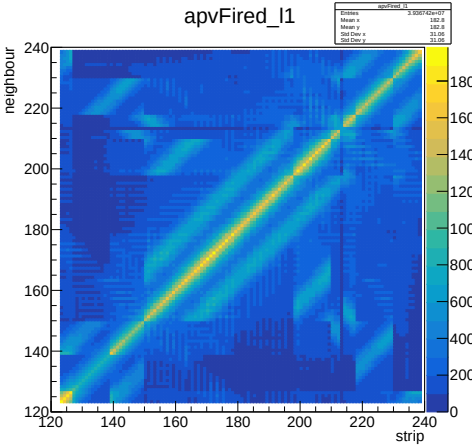
Observation

If we'd have mapping problems this plot would have break lines, but it hasn't.

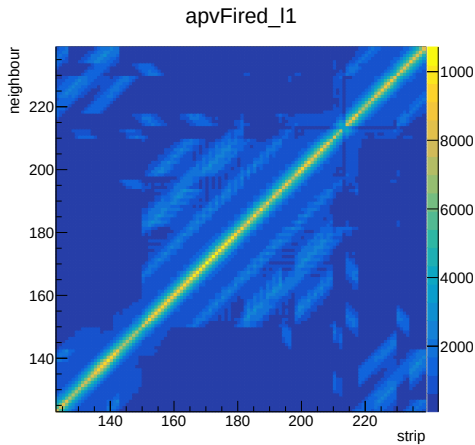
Hovever, I'll check if position bad statistics points in (about) the same position on that plots are connected

Reminder: Comparison with April TB – apvFired, Layer 1

July TB



April TB



Current problems

Question was: "Please, show PDO fot diagonal and non-diagonal hits".

Since the plot has double counting, question is meaningless. I decided to understand this question alternatively

Pollible sources of problems:

- APV x-talks
- MM connector x-talks
- MM mapping
- ~~Straw x-talks~~
  Not an option since can be disabled by clusterizing MM data
- straw mapping

Possible plots

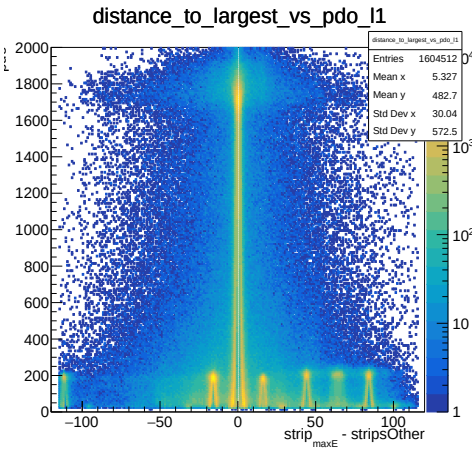
- "Diagonal" plot without double-counting

Plot against hit with largest PDO (July TB)

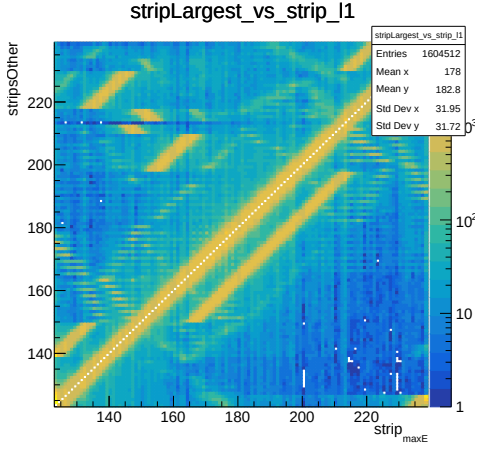
Definition:

$strip_{maxE}$ - position of hit with maximal PDO in event

Distance to hit with maximal PDO inevent



All hits in event vs hit with largest PDO in event

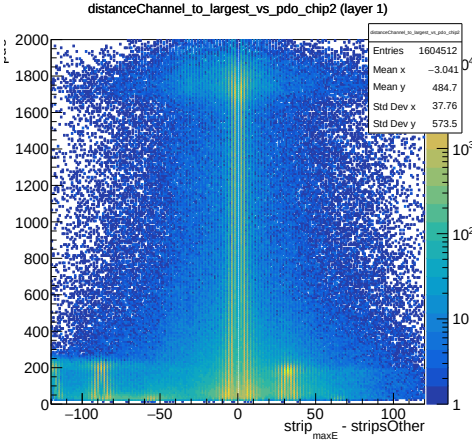


Plot against hit with largest PDO in chip channel numeration (July TB)

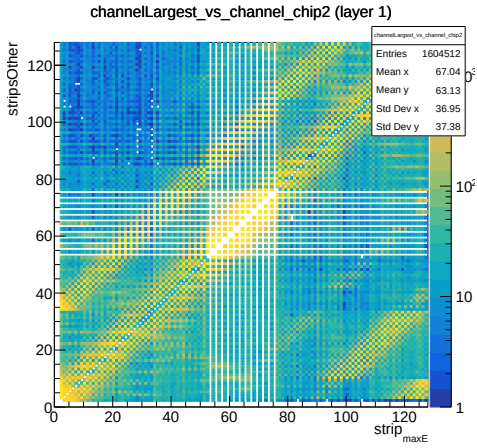
Definition:

$strip_{maxE}$ - position (chip channel) of hit with maximal PDO in event

Distance to hit with maximal PDO inevent



All hits in event vs hit with largest PDO in event

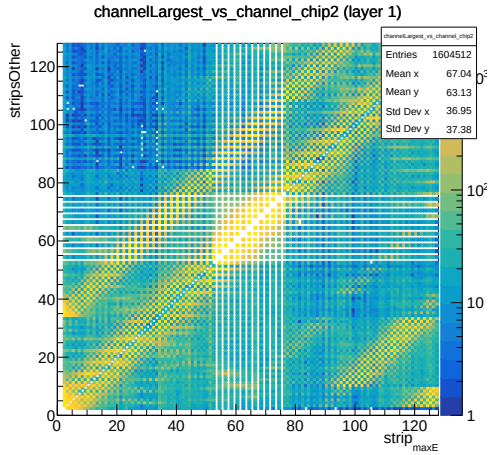


Plot against hit with largest PDO in chip channel numeration (July TB)

Definition:

$strip_{maxE}$ - position (chip channel) of hit with maximal PDO in event

All hits in event vs hit with largest PDO in event



Observation

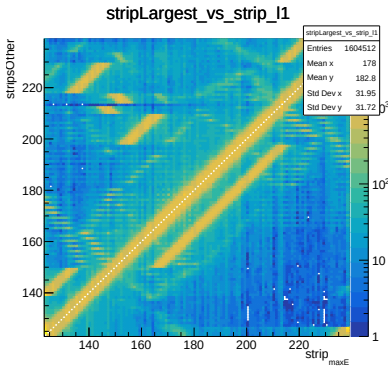
- Do that looks like x-talks?
- In case of *in-connector* x-talks, for chip channel N channels (N$\pm$1) should be also fired.
- Can that be in-APV problem?

Comparison with April TB

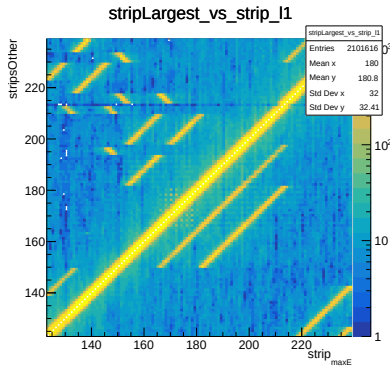
Definition:

$strip_{maxE}$ - position of hit with maximal PDO in event

July TB (per-layer)



April TB (per-layer)



Observation

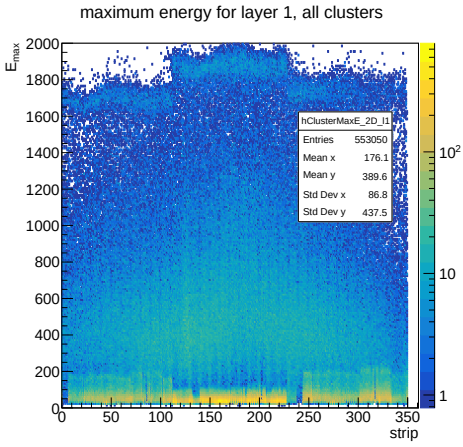
We can see similar structures

Backup

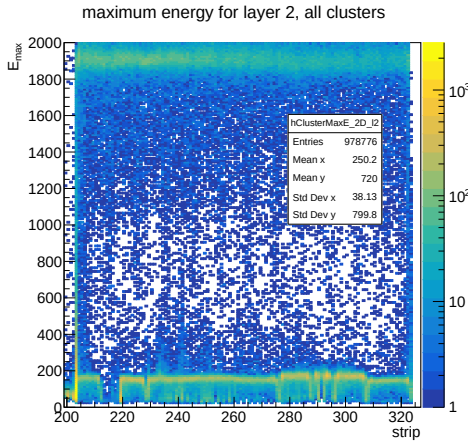
backup

Charges in Aril TB, non-center, april tb

Maximum energy in cluster in Layer 1, April TB



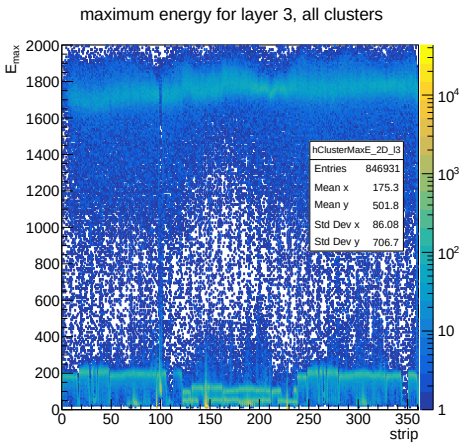
Maximum energy in cluster in Layer 2, (right apv only) April TB



MM layer 2 charge was the same as on all MM in July TB

Maximum energy in cluster in Layer 3 (Y-layer)

July TB



April TB