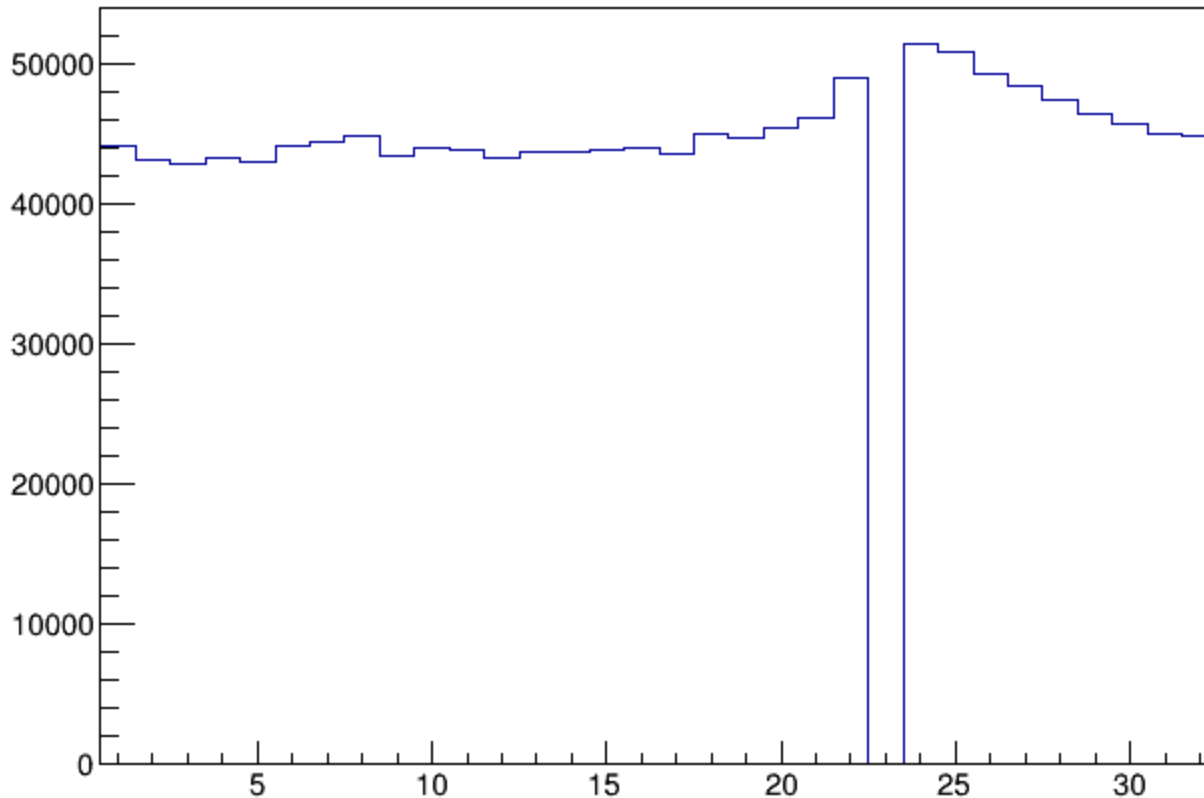


TPOL update

Look at 2018 data and the creation of
some new filter boards

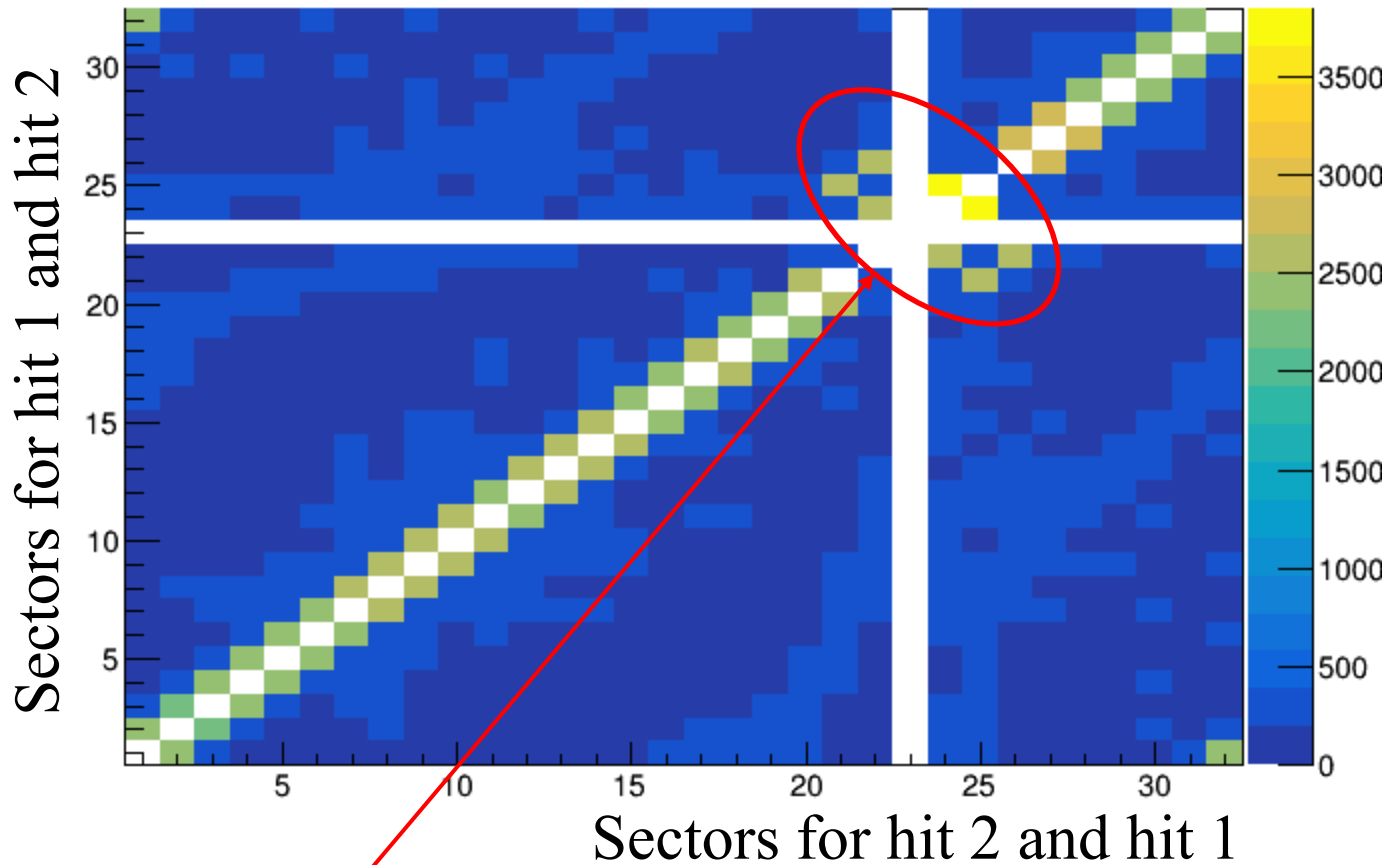
Dead sector issue

For now, only looking at runs 41117, 41118, 41119



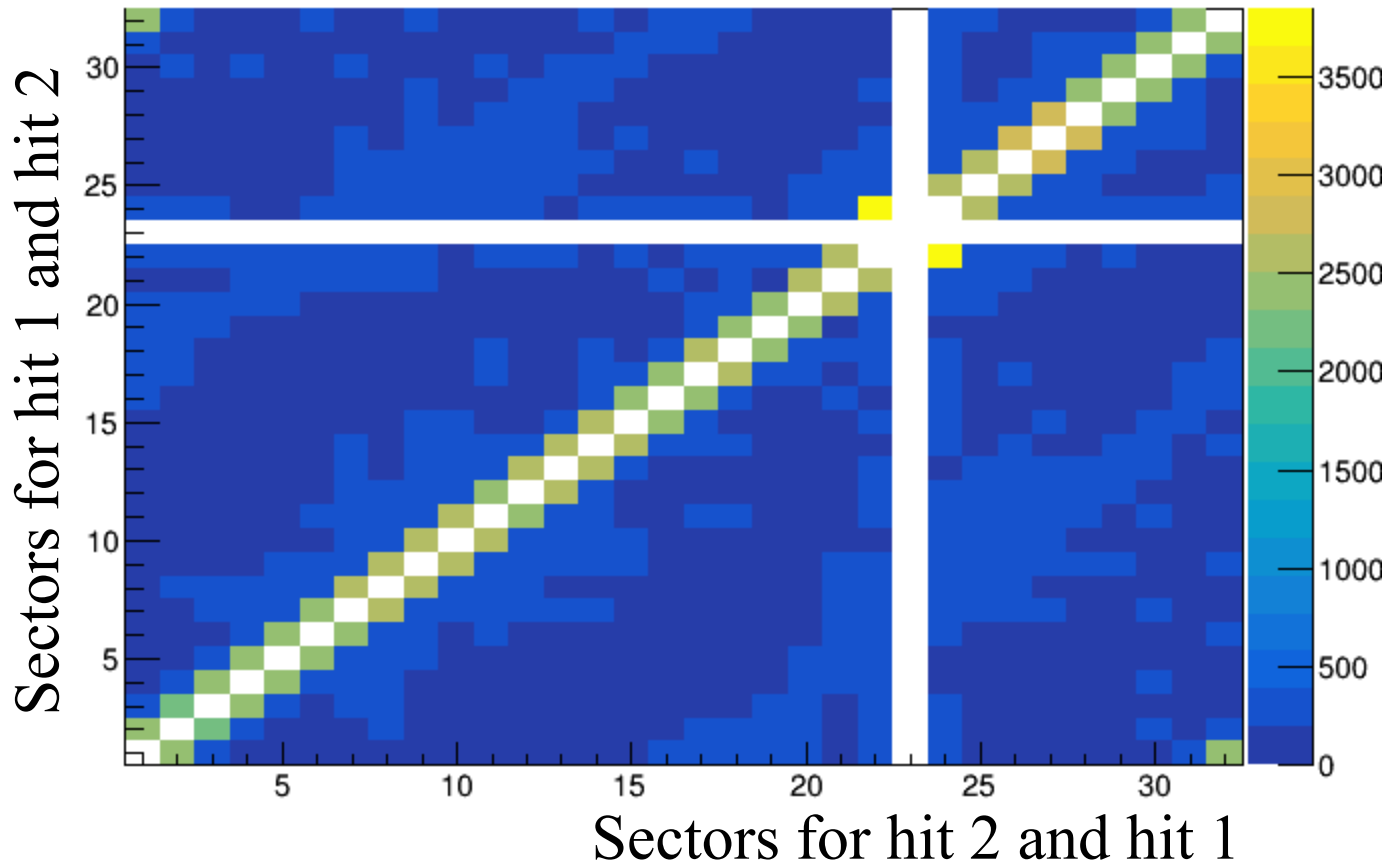
- Sector 23 is dead ☹️
- Expecting more symmetry around sector 23 ☹️

Events with 2 TPOL hits

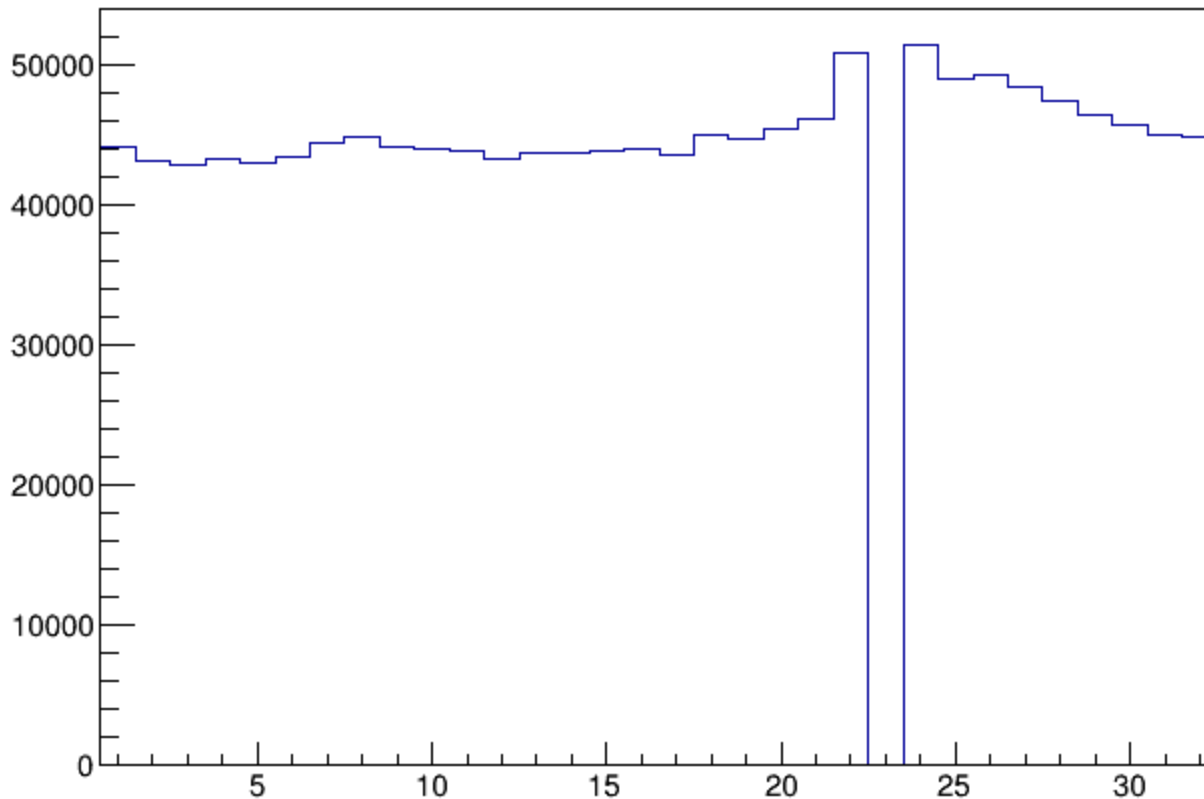


Funny pattern represents cable swap of sectors 22 and 25

Events with 2 TPOL hits and cable swap

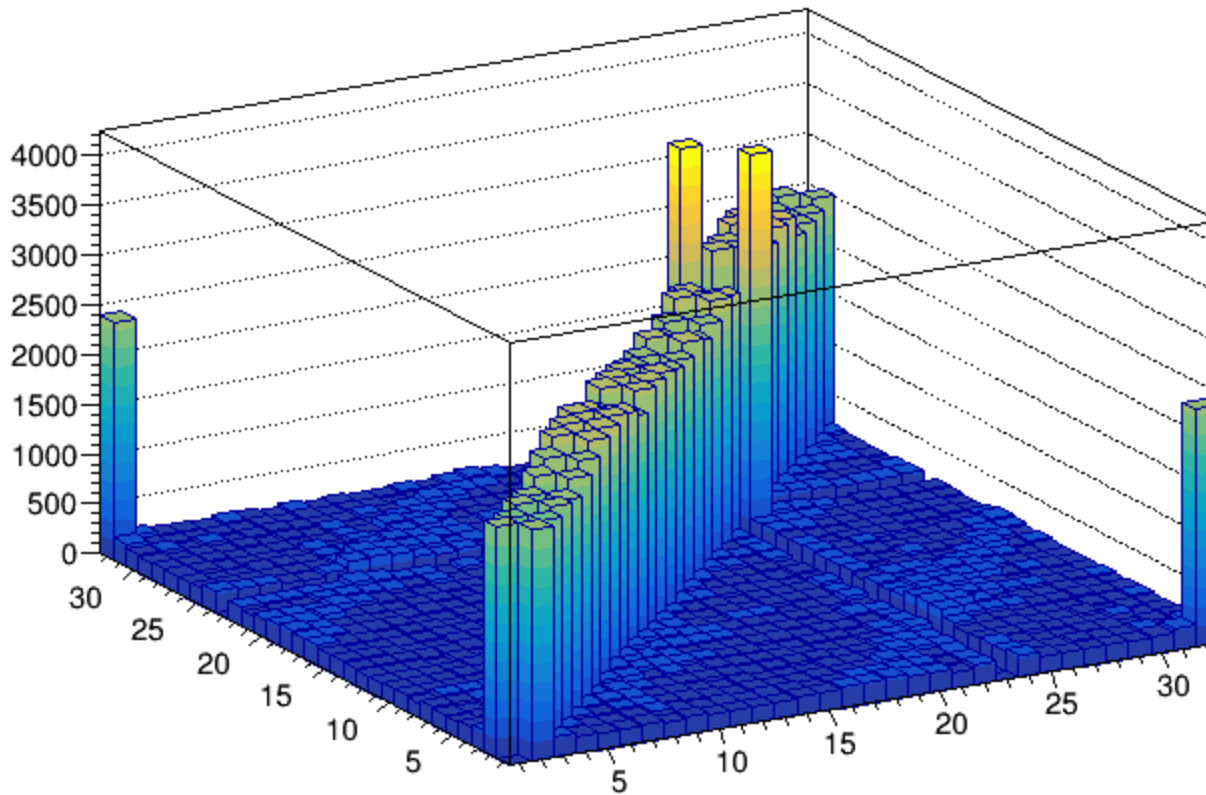


Dead sector issue with cable swap



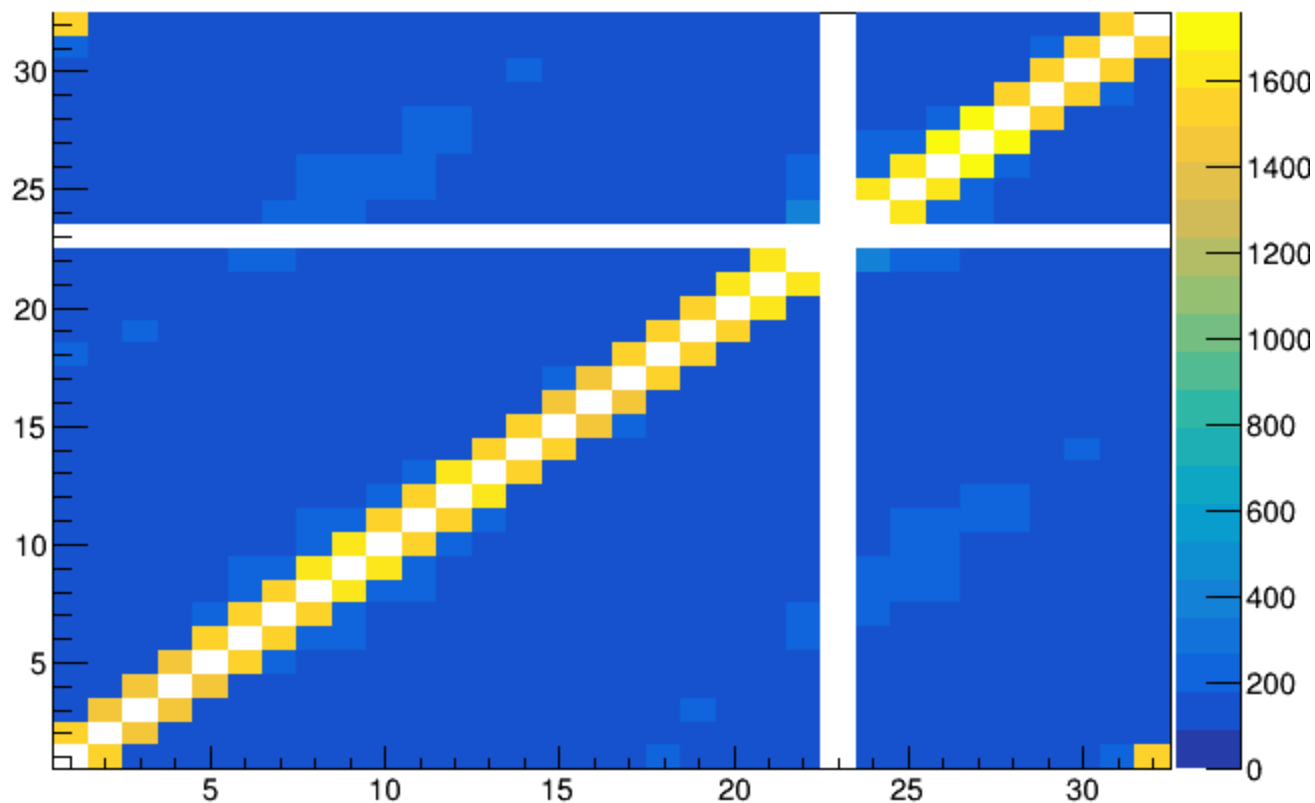
- Better symmetry around sector 23

Events with 2 TPOL hits and cable swap



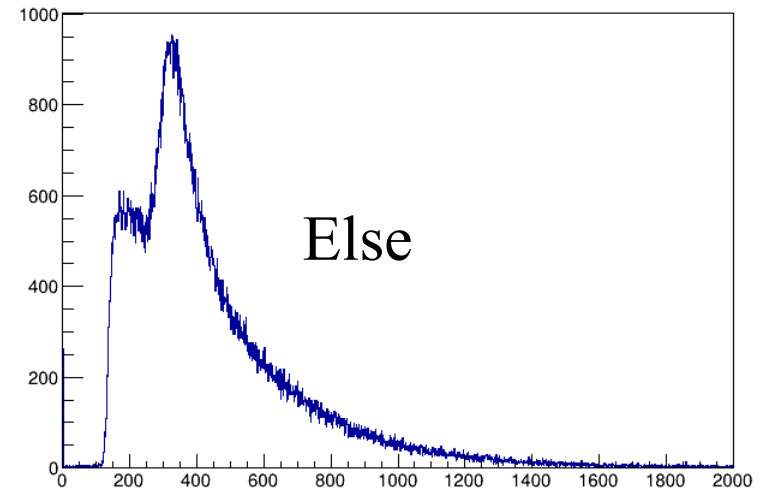
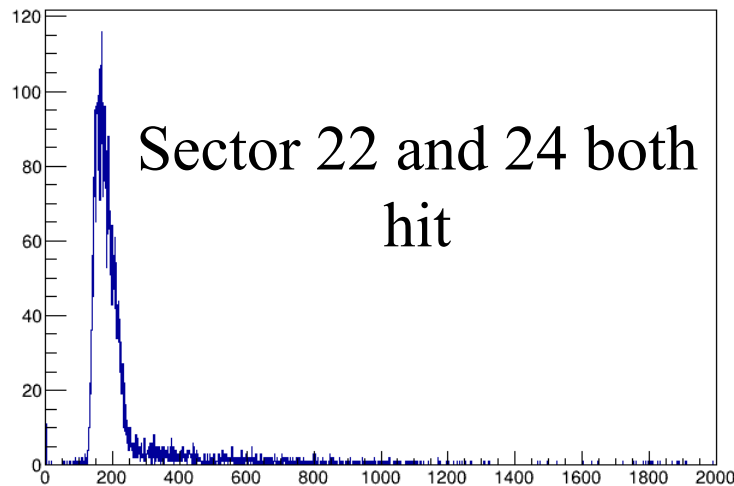
Hot spots for when sector 22 and 24 are both hit

Events with 2 TPOL hits and cable swap and energy deposition > 230 MeV



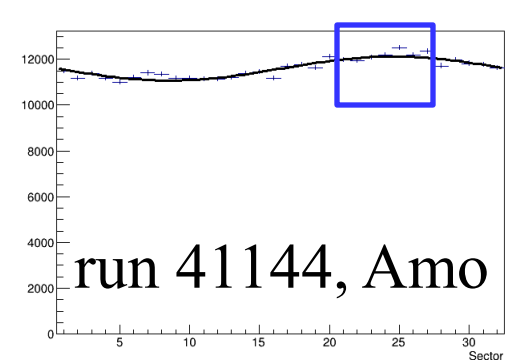
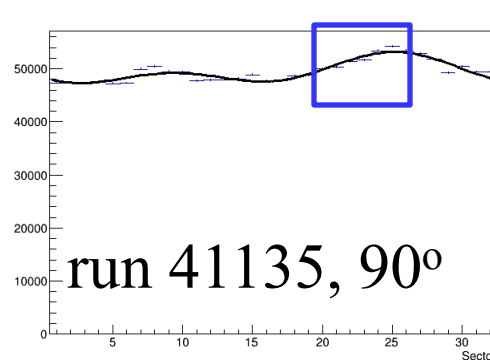
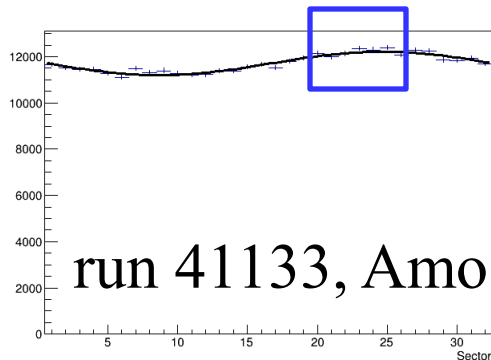
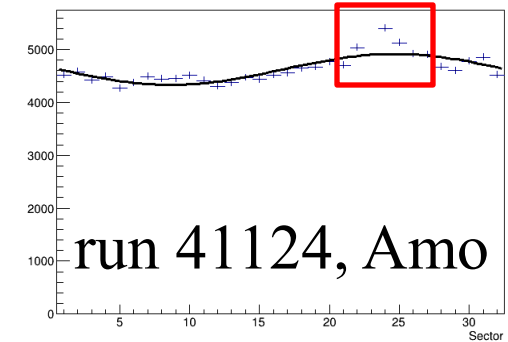
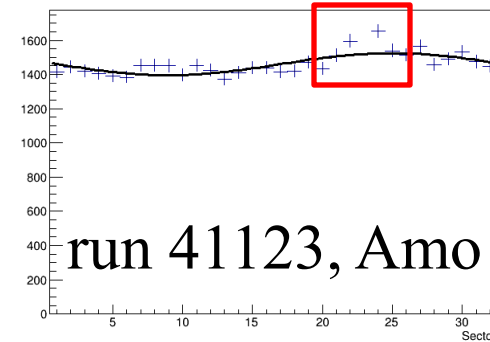
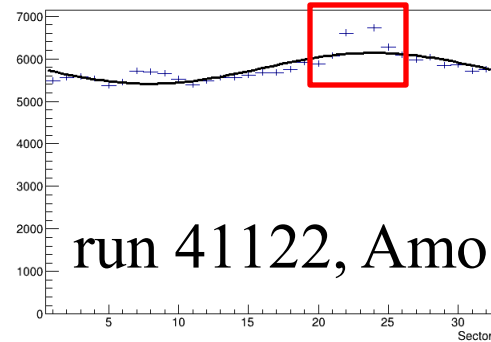
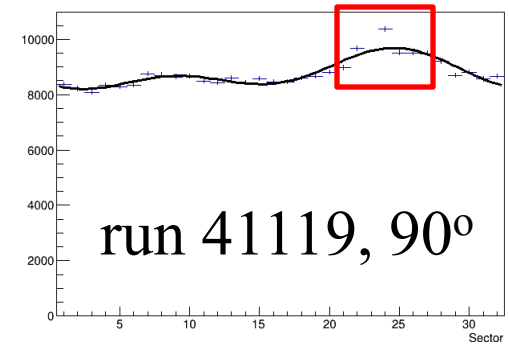
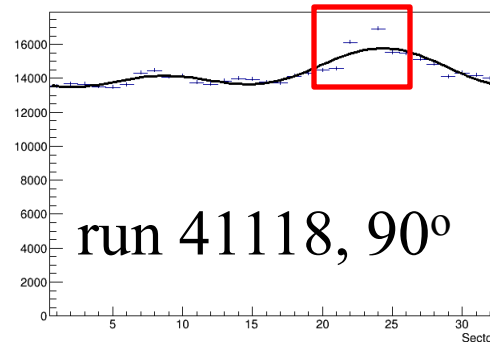
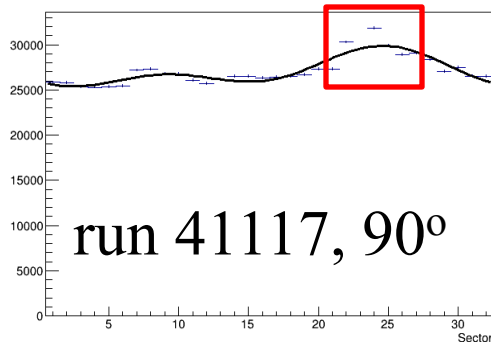
Now when sector 22 and 24 are both hit, no hot spot

Events with 2 TPOL hits



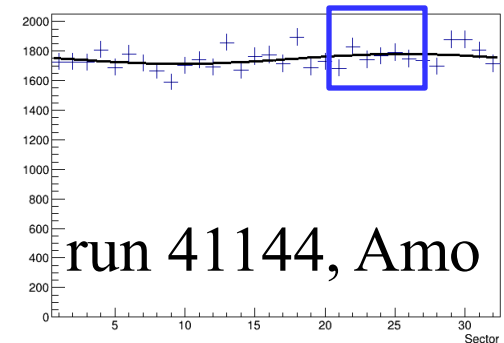
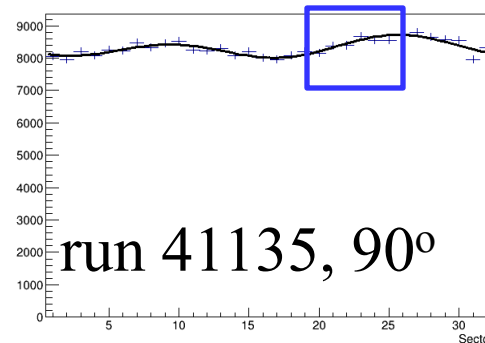
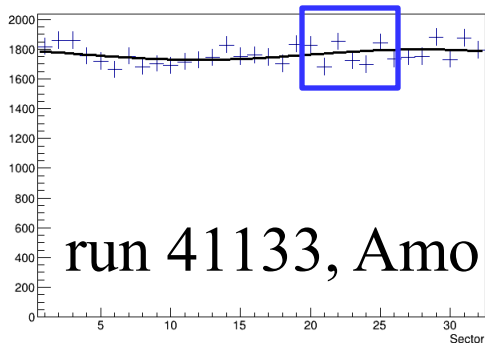
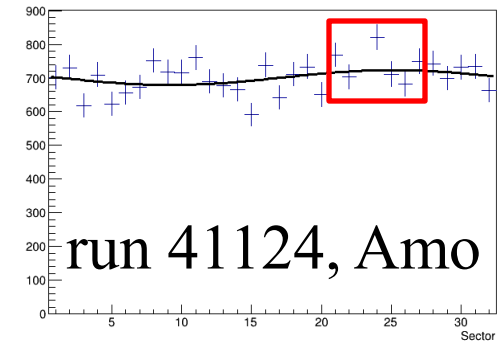
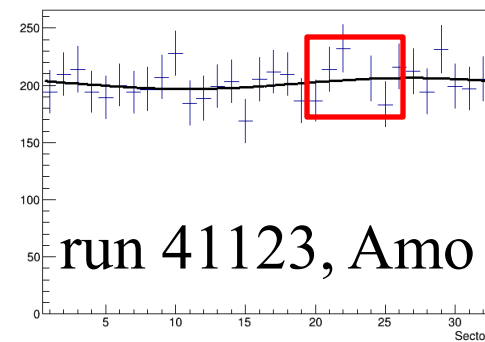
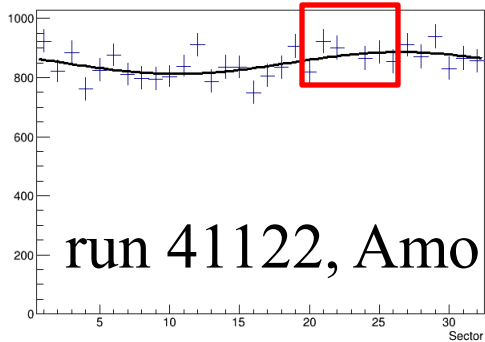
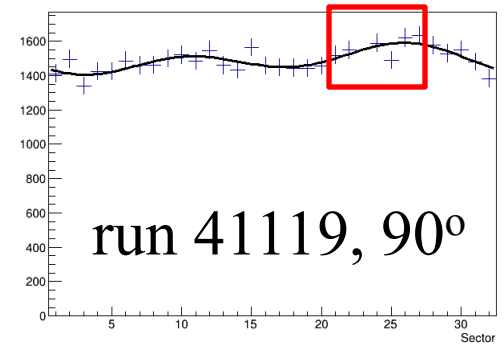
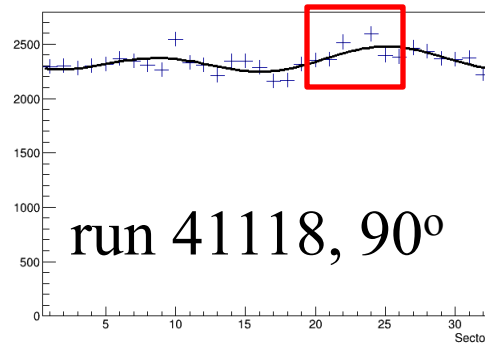
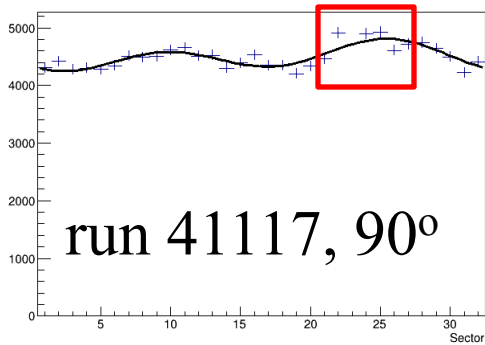
- Very different energy distributions
- Tried many ways to recover sector 23 but was not successful ☹️
- Will just kill sectors 22, 24 for runs with dead sector 23.
- How many runs have this problem →

Raw counts versus sector



• Sector 23 comes to life sometime between 41124 and 41133 ☺

Accidental subtracted counts versus sector



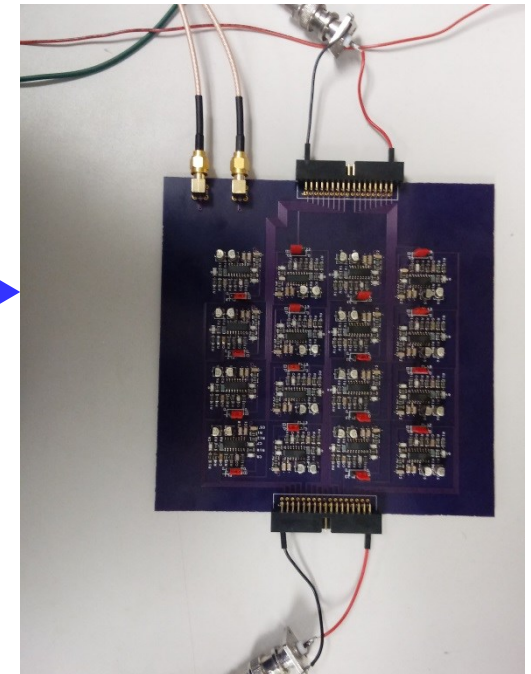
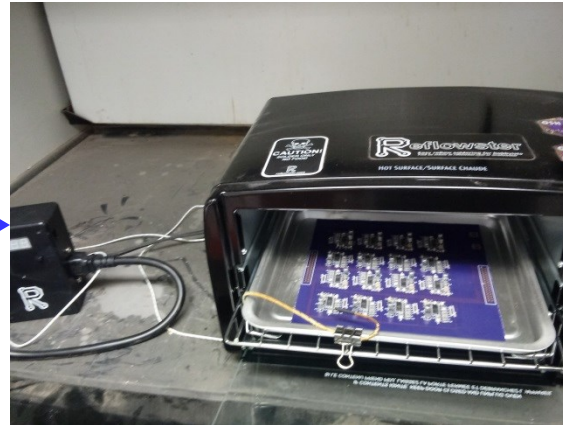
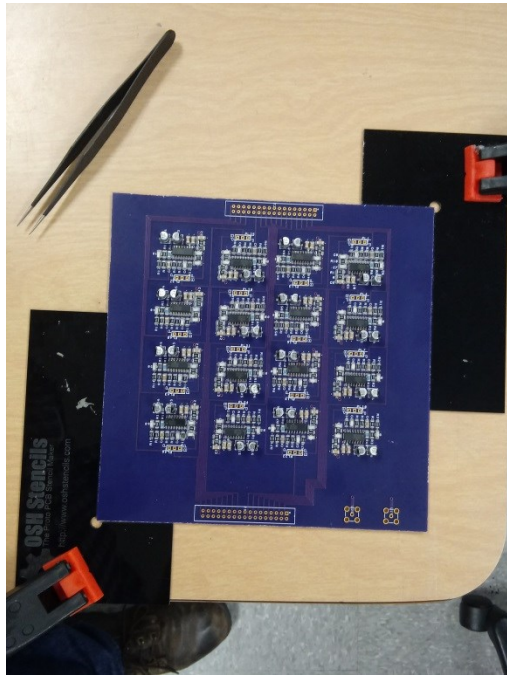
Runs in my list

- Number of runs
 - 0° : 241 (207 with 75 μ m convertor and 37 with 750 μ m)
 - 45° : 196 (161 with 75 μ m convertor and 35 with 750 μ m)
 - 90° : 240 (176 with 75 μ m convertor and 64 with 750 μ m)
 - 135° : 154 (110 with 75 μ m convertor and 44 with 750 μ m)
 - Amo: 381 (291 with 75 μ m convertor and 90 with 750 μ m)
- It looks like we have, at most, 22 runs with dead sector 23
 - 0° : 41112, 41113, 41114, 41116
 - 45° : 41108, 41110, 41132
 - 90° : 41106, 41117, 41118, 41119
 - 135° : 41107, 41120, 41121, 41127, 41128, 41130, 41131
 - Amo: 41111, 41122, 41123, 41124

Hardware check

- I have concerns about radiation damage to the TPOL electronics
 - Preamps are probably OK
 - Filter boards are probably OK but are in the path of a spray of secondary photons coming off the TPOL convertor and need to be checked
- We have spare preamps at the lab
- Currently creating spare filter boards
- Will come to the lab to do a complete hardware checkup on TPOL

Filter board assembly and testing



Populate

Bake

Test

- One board built, and tested yesterday
- Next board to be finished tomorrow
- Will be at JLab next week to check old boards

Title

