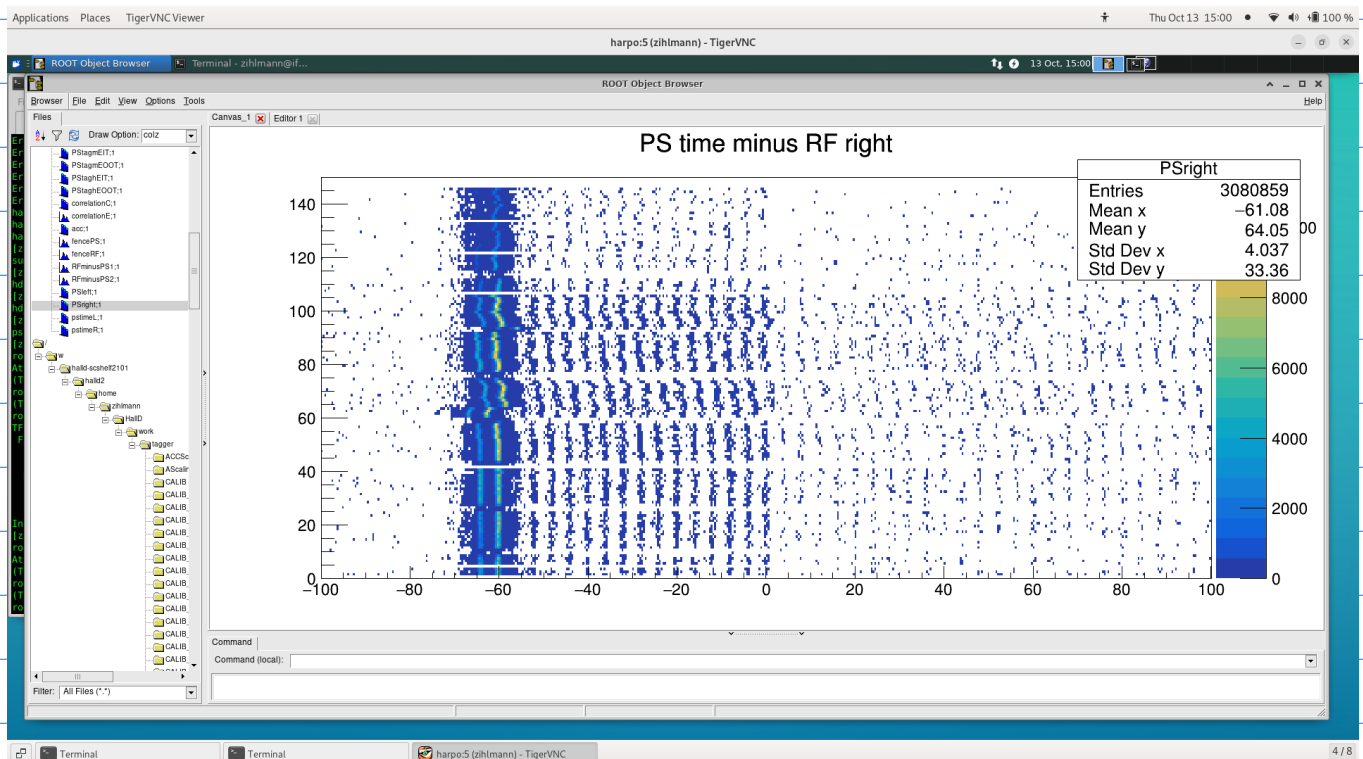
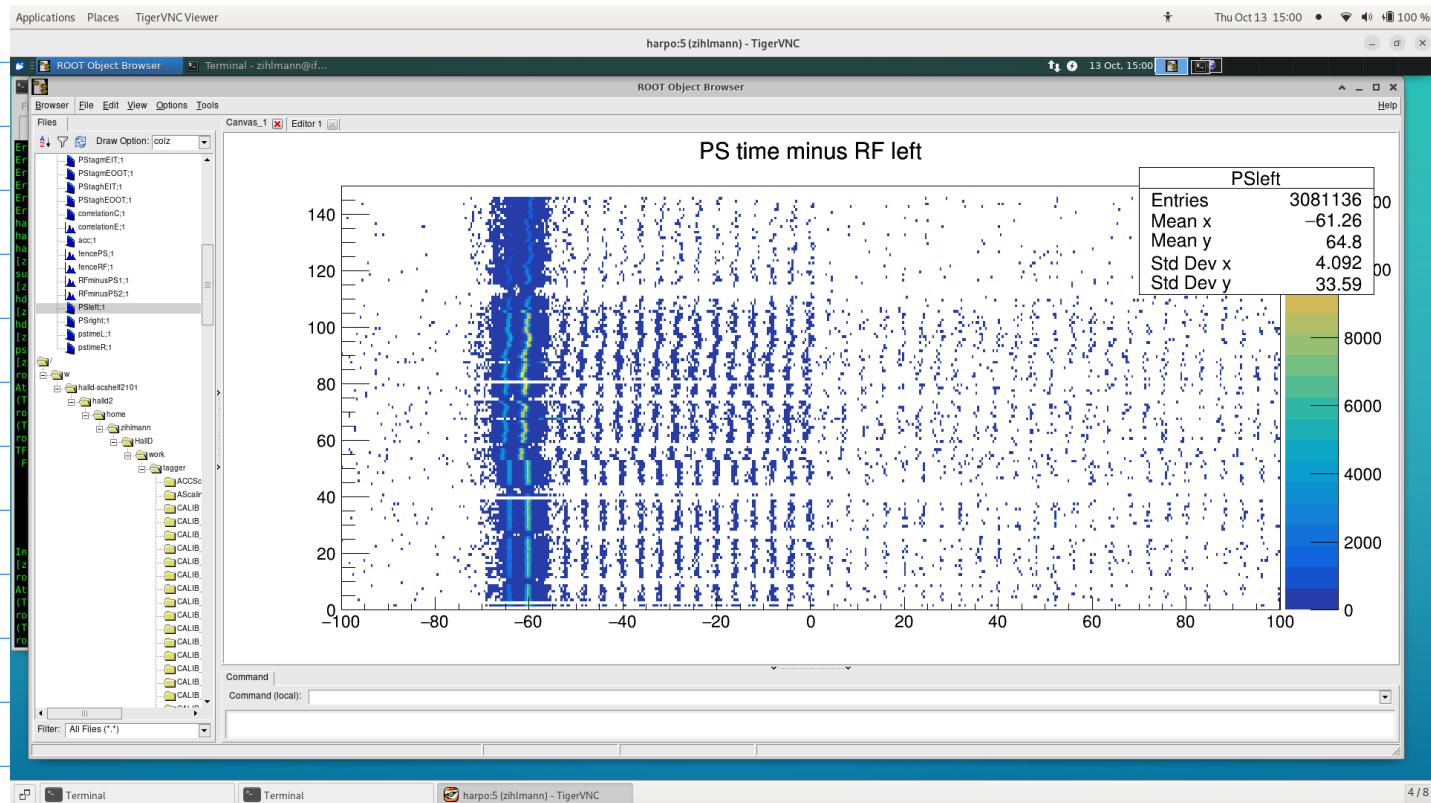


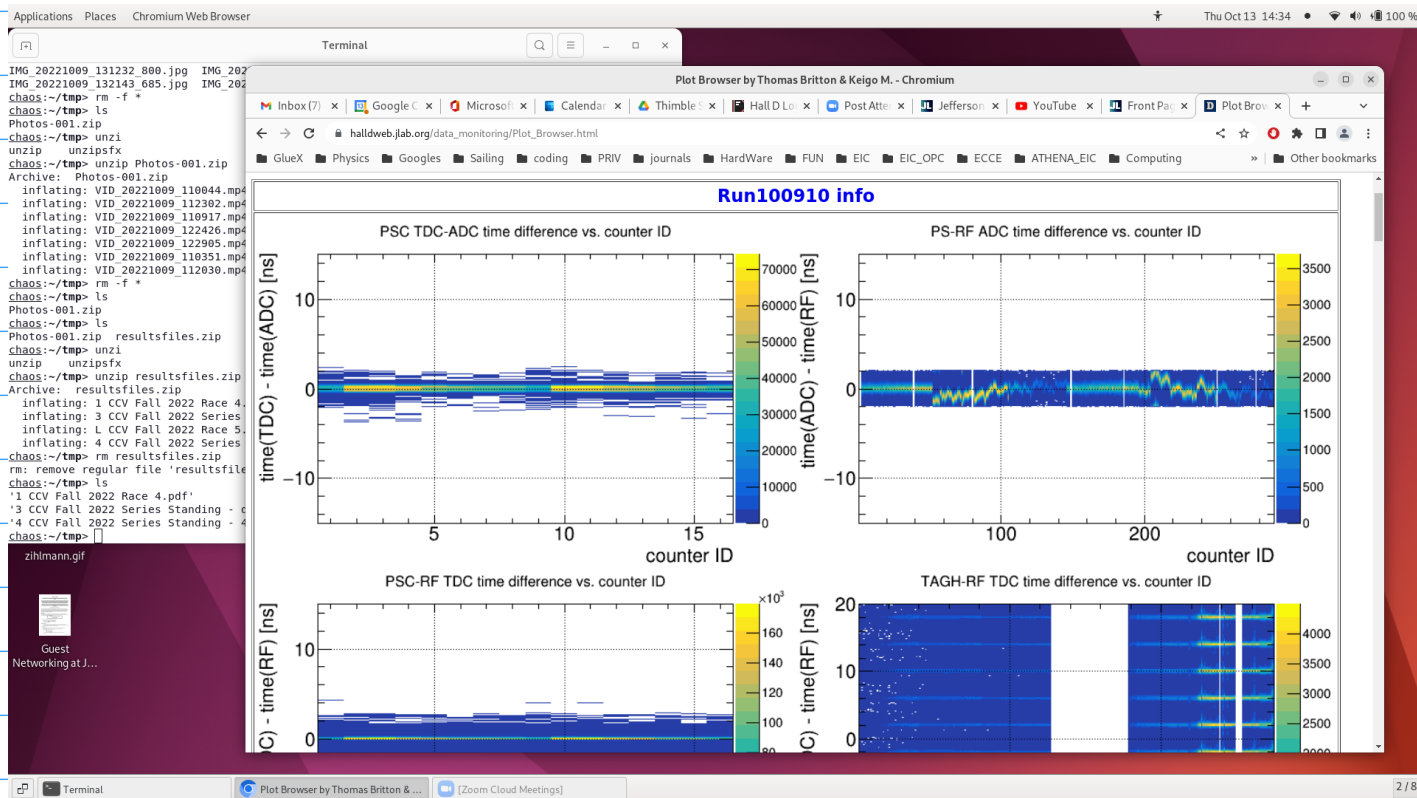
Analysis of Run 100904: 30nA on Pb target PERP diamond

Latest monitoring run v04: timing calibration of tagger minus RF is NOT aligned for a majority of counters:



while most of the counters up to # 42 seem to be aligned mostly all further counters are off by quite some margin. this is true for both left and right arrays.

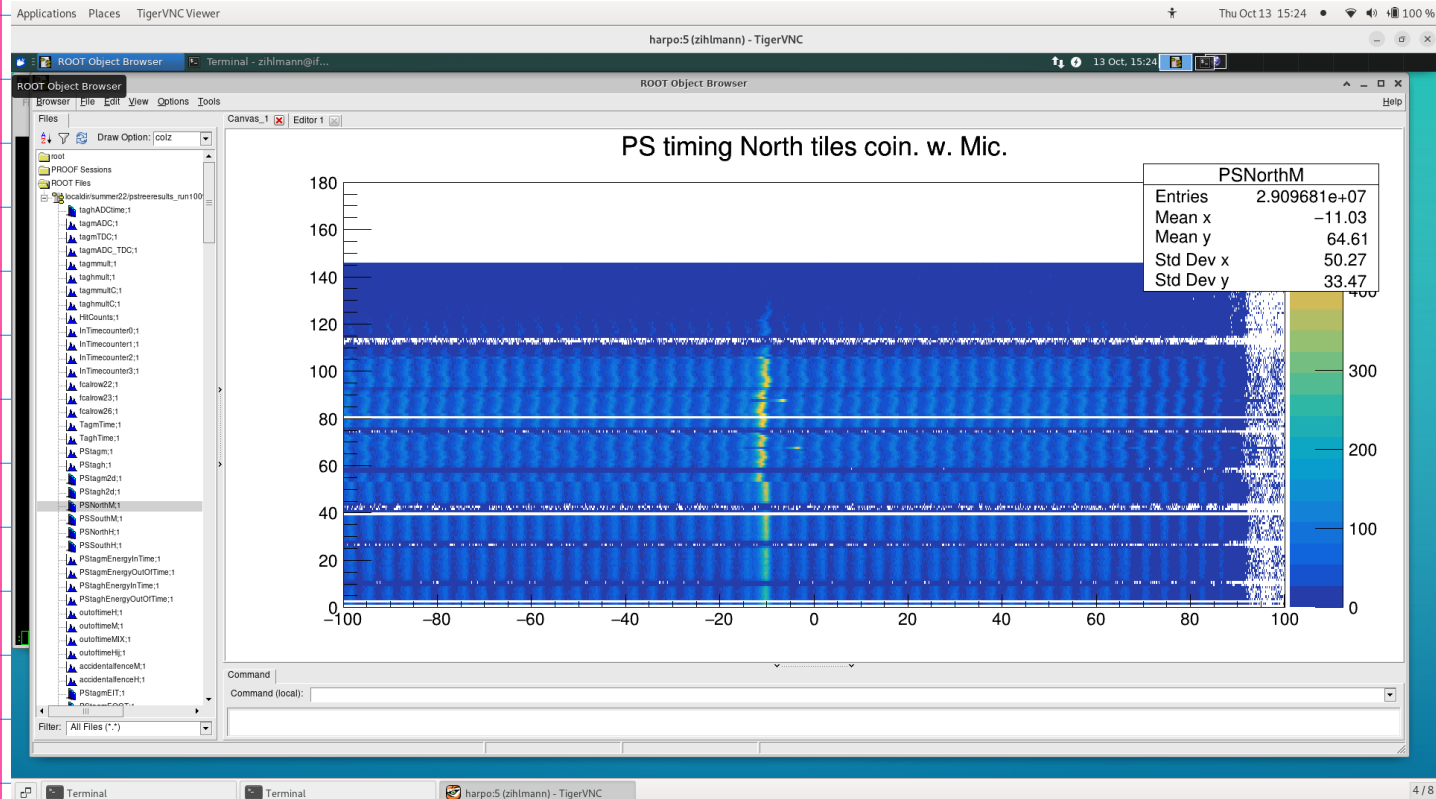
In a similar way one can see this also in the monitoring plots from v04: the time difference between ADC time and RF time as a function of counter ID is of for most of the counters on the left (<143) and on the right (>142)



why in the latter case the time difference is around zero while in the first two plots the time difference is at -60 is not clear at this point. (these are outcomes from two different plugins.)

when looking further at the time difference between tagger hodoscope / microscope and the PS-"fine" detectors this time difference is not close to zero as it should be for the prompt beam photons.

as a result the timing between the PS tiles and the beam photon time is off and for most PS counters not aligned:



Issues:

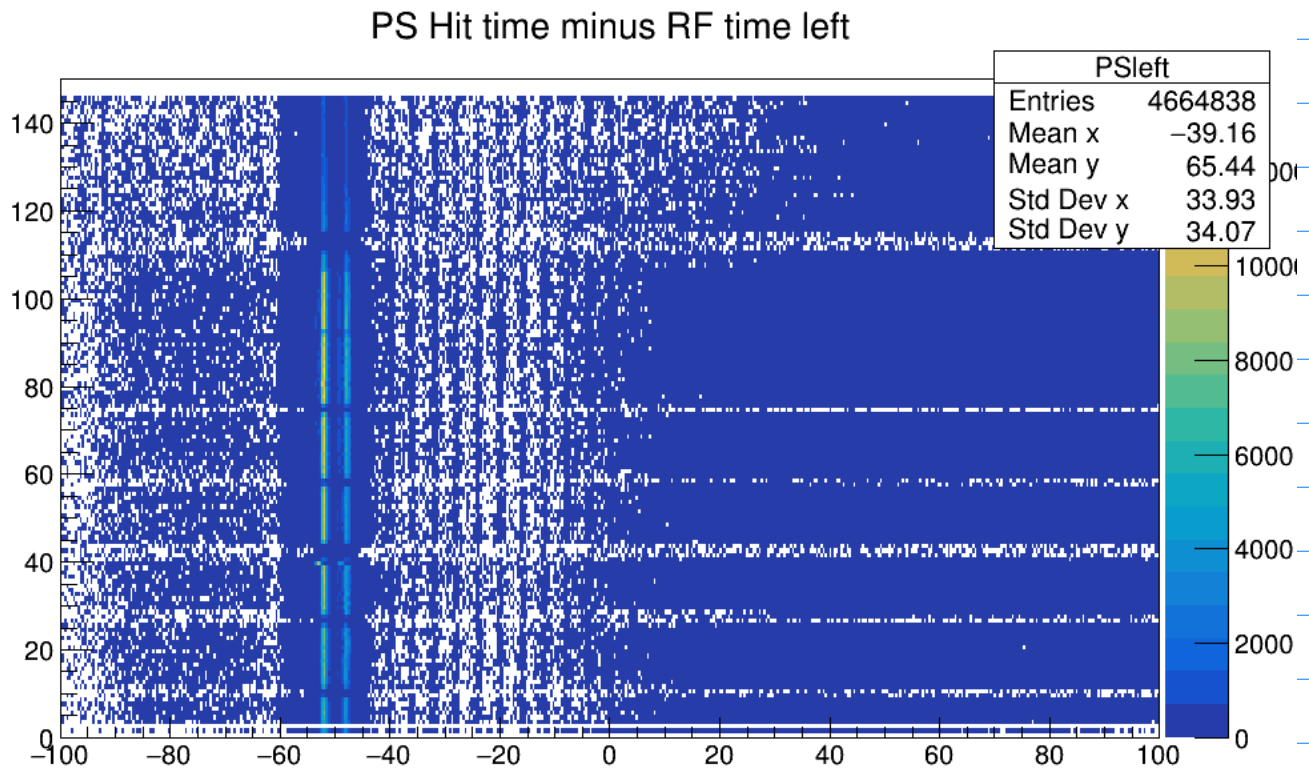
- 1) a substantial amount of PS counters are not properly aligned
- 2) the timing difference between tagger and PS is off for all PS counters.
- 3) even when looking at the combined left-right timing this results in an offset that leads to a timing difference peak off from zero
- 4) as a consequence the plugin to determine the accidental correction factor will lead to very wrong results as in-time and out-of-time hits will be mixed up completely

use run 101304 as reference starting point.

- a) modify the base time offsets for the PS detector such that the time difference between the PS and tagger counters is close to zero.
- b) then modify the timing offsets for all fine counters of the PS to line up.

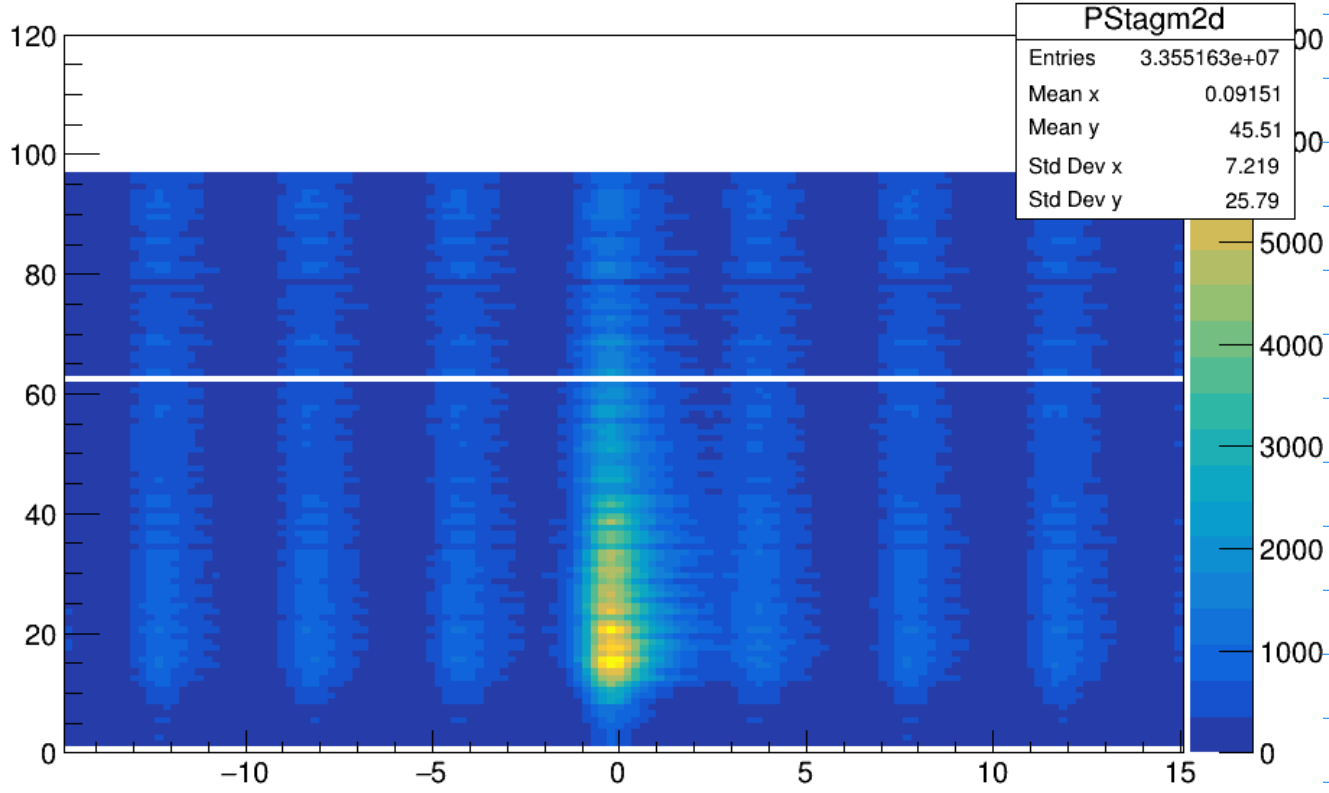
As a result the PS Hit time minus RF is now smooth and aligned at some value such that the time difference between PS and tagger ends up at $t=0$.

First the resulting distribution for the PS minus RF

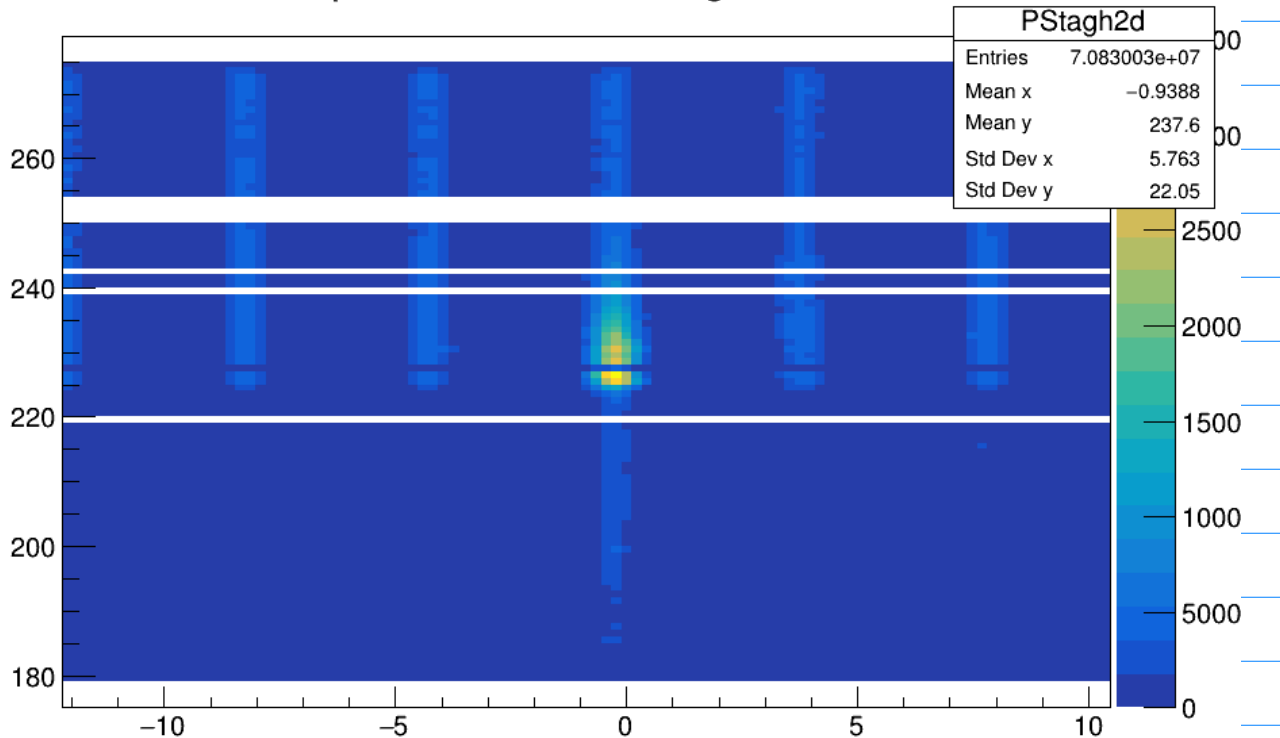


secondly the time difference between the PS and the tagger detectors.
the hodoscope looks better than the microscope, meaning the microscope
needs some better timing calibration as well.

Microscope Counter ID vs. tagm time - PStime



Hodoscope Counter ID vs. tagh time - PStime



one may argue that the base time offset for the PS is slightly off since both tagger
time differences to the PS are not perfectly at zero.