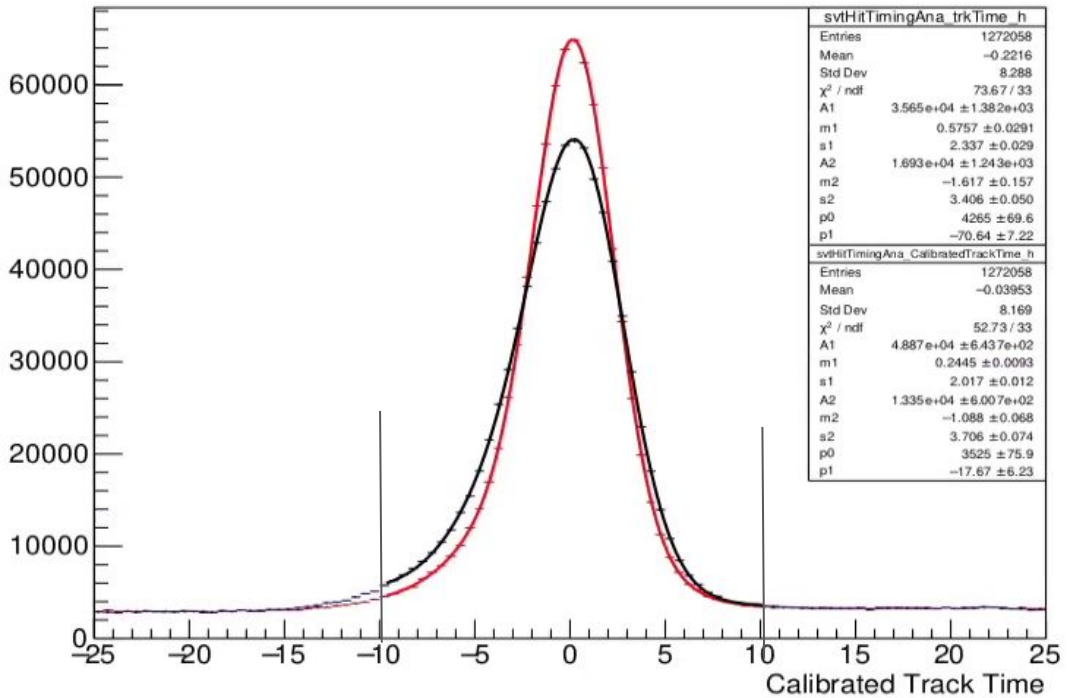# Per-run svt timing for 2021 data

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Analysis Meeting
May 2, 2023
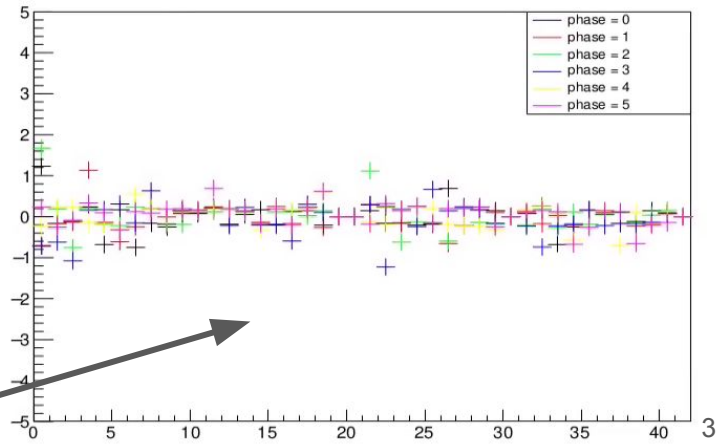
Intro

- Building on the SVT hit timing calibration shown lots of times…[this is probably best talk](#)
- I use (svt hit - ecal cluster) times to calibrate…this takes out a small time correlation for in-trigger-time tracks (and lets us use real out of time tracks)
- I'm showing here just track times (not cluster subtracted)
- Times shown have calibrations from run 14495 already applied
  - This takes out the large thin- vs thick- sensor offset
    - Somewhat…looks like they moved around a bit during run period

Getting mean and std dev from track times

svtHitTimingAna_trkTime_h	
Entries	1272058
Mean	−0.2216
Std Dev	8.288
χ^2 / ndf	73.67 / 33
A1	3.565e+04 ±1.382e+03
m1	0.5757 ±0.0291
s1	2.337 ±0.029
A2	1.693e+04 ±1.243e+03
m2	−1.617 ±0.157
s2	3.406 ±0.050
p0	4265 ±69.6
p1	−70.64 ±7.22

svtHitTimingAna_CalibratedTrackTime_h	
Entries	1272058
Mean	−0.03953
Std Dev	8.169
χ^2 / ndf	52.73 / 33
A1	4.887e+04 ±6.437e+02
m1	0.2445 ±0.0093
s1	2.017 ±0.012
A2	1.335e+04 ±6.007e+02
m2	−1.088 ±0.068
s2	3.706 ±0.074
p0	3525 ±75.9
p1	−17.67 ±6.23

Calibrated Track Time

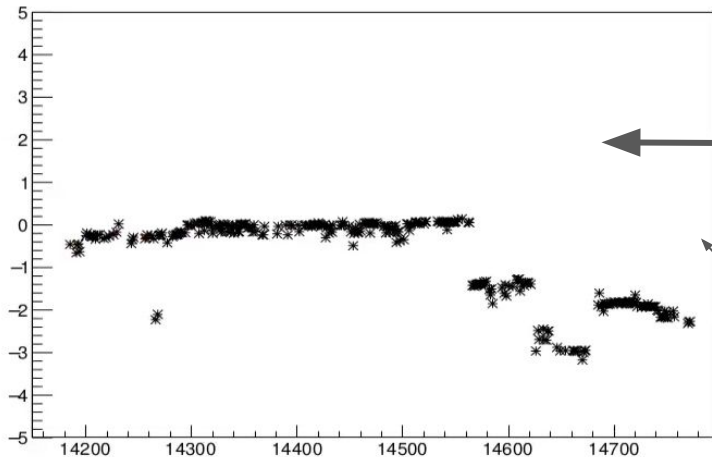To make nice plots I fit track time to double gaussian + constant…but to get means & std dev for per-run plots to follow I just calculate from bins ± 10ns
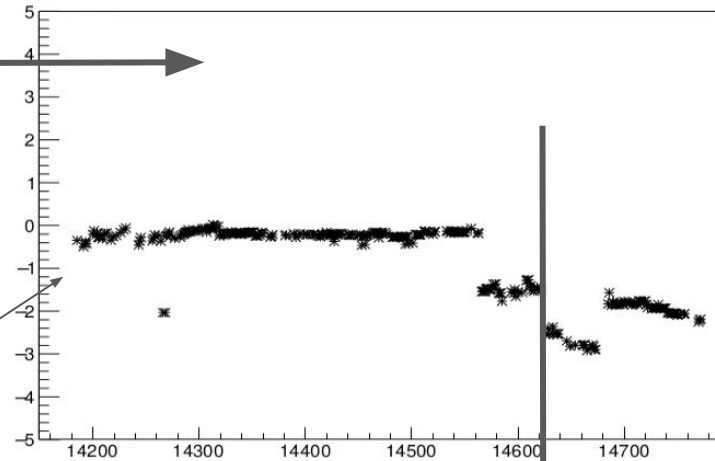
Side note…previously I showed the per-sensor mean times after calibration that looked crappy…this was a plotting bug. Now it looks ok…but just ok.

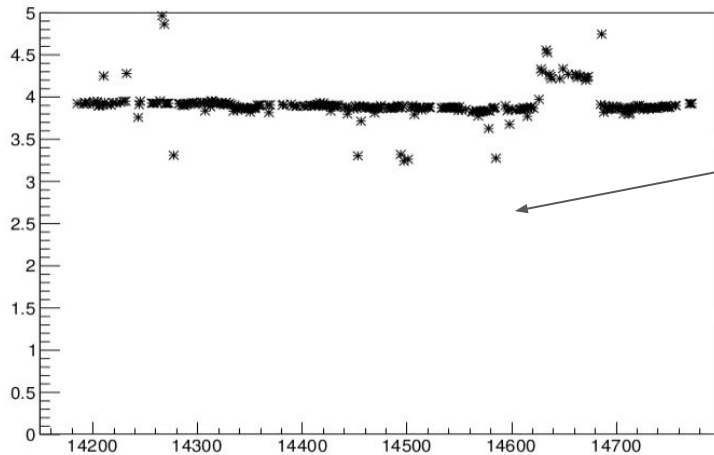3

Mean vs Run particle = electron half = both phase = all
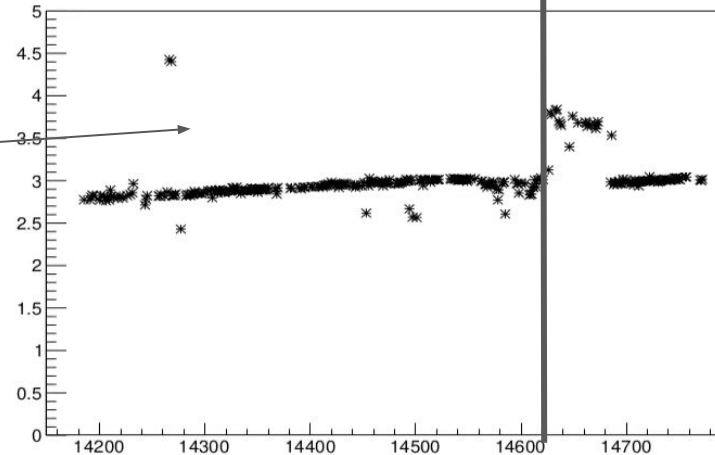
Mean vs Run particle = positron half = both phase = all

positrons

electrons

Mean times

Std Dev vs Run particle = electron half = both phase = all

Std Dev vs Run particle = positron half = both phase = all

Std devs

4