TOF DSTs

Turgun Nigmanov
Durga Rajaram

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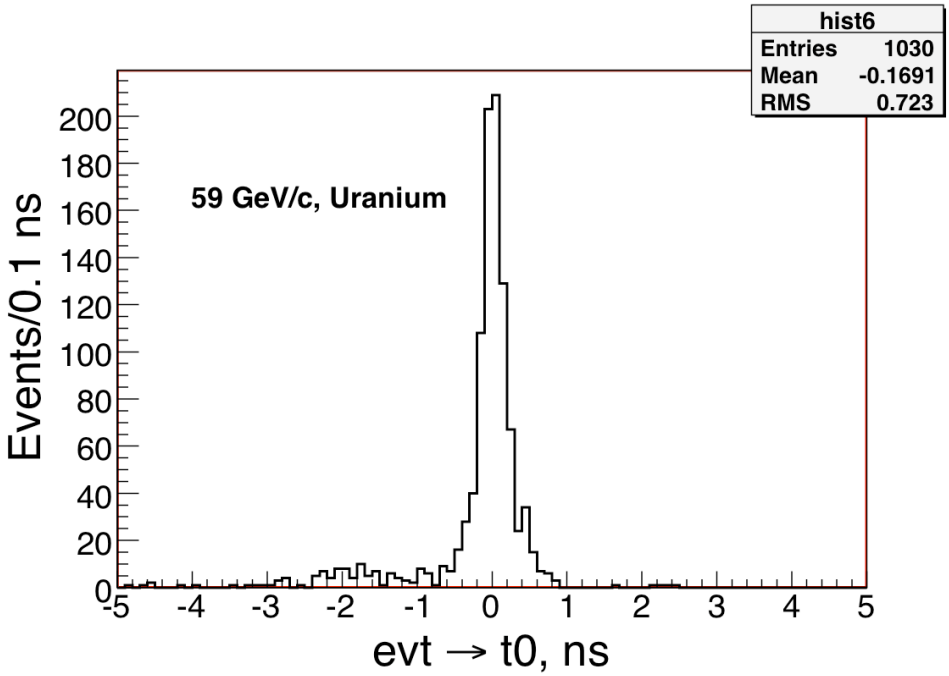
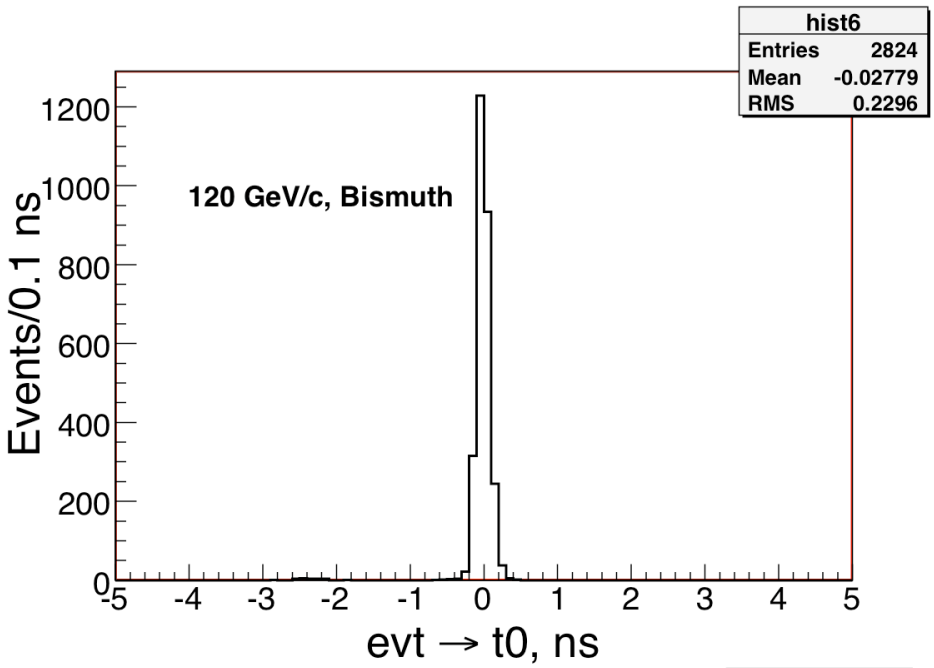
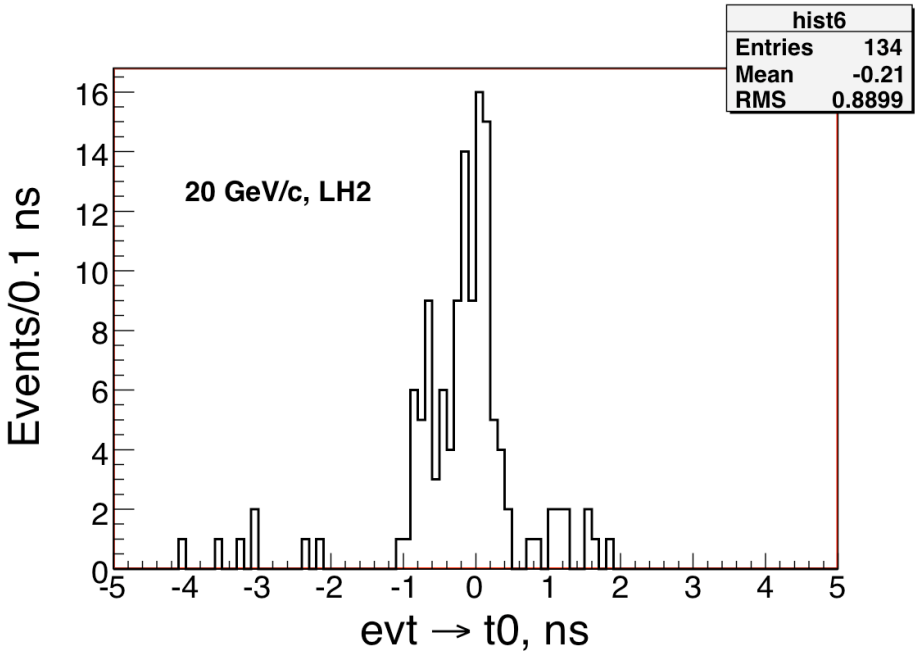
First look (for us) at TOF DSTs

- Data looked at:
  - U 59 GeV, Bi 120, LH_2 20
- Selection cuts:
  - NTrks < 20
  - 1 Beam track
  - 0 < BeamTrackTime < 15ns
  - vertex consistent with target
  - at least 3 tracks in vertex
  - -5 < TrackTime < 50ns
  - 1.0 < pTot < 3.0 GeV
  - single track match with TOF bar

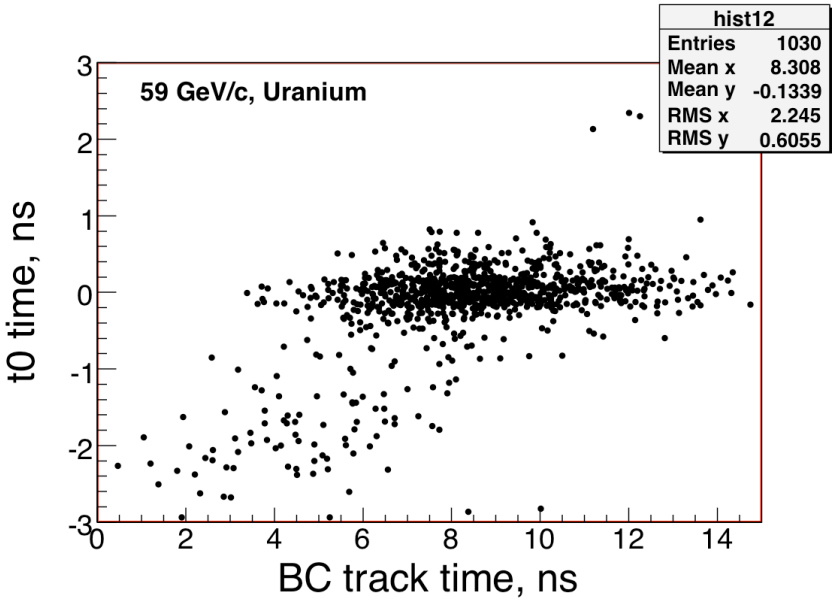


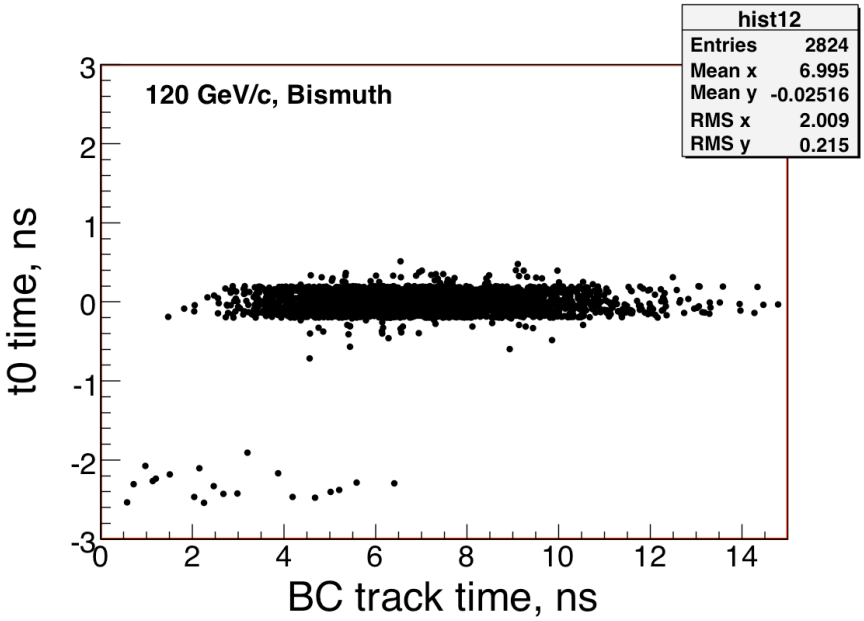


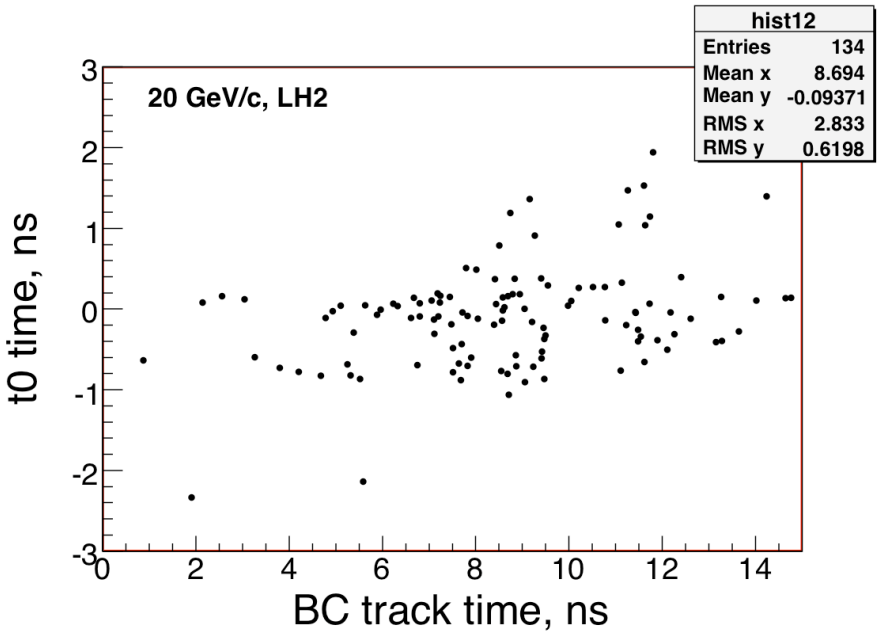


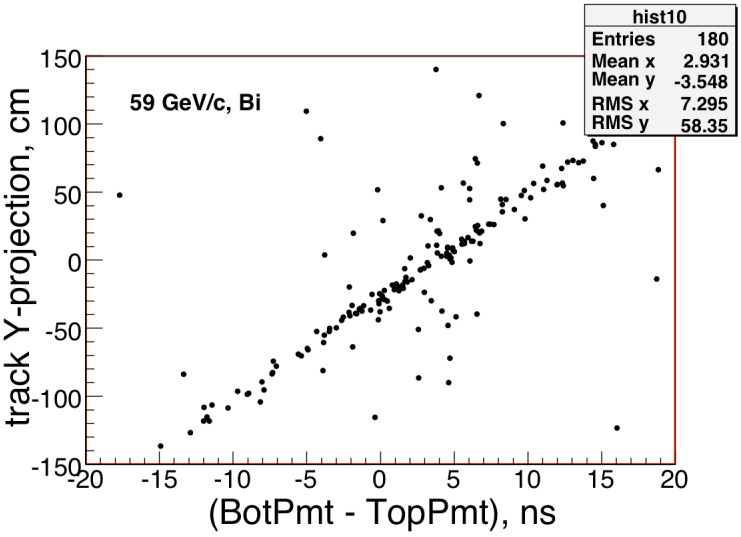
T0 distribution looks clean for 120 GeV, but not for LH2.

Tighter cuts on tails


hist12
Entries 1030
Mean x 8.308
Mean y -0.1339
RMS x 2.245
RMS y 0.6055
59 GeV/c, Uranium
t0 time, ns
BC track time, ns


hist12
Entries 2824
Mean x 6.995
Mean y -0.02516
RMS x 2.009
RMS y 0.215
120 GeV/c, Bismuth
t0 time, ns
BC track time, ns

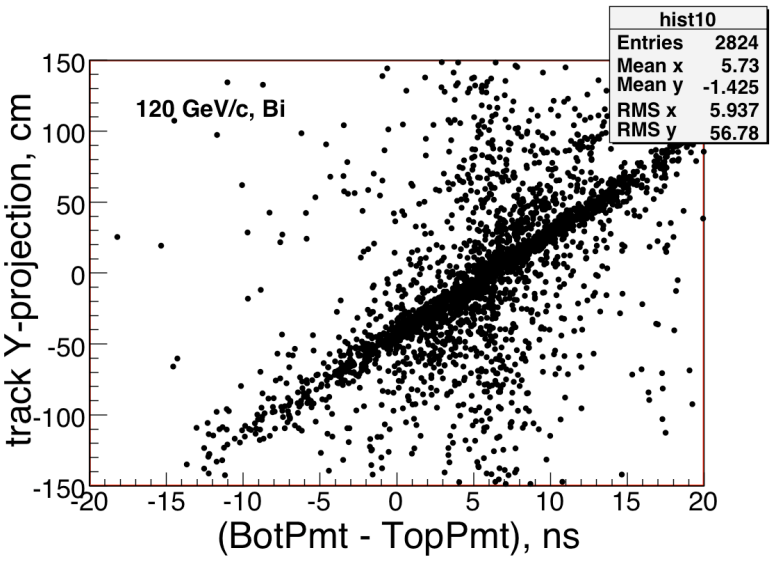

hist12
Entries 134
Mean x 8.694
Mean y -0.09371
RMS x 2.833
RMS y 0.6198
20 GeV/c, LH2
t0 time, ns
BC track time, ns

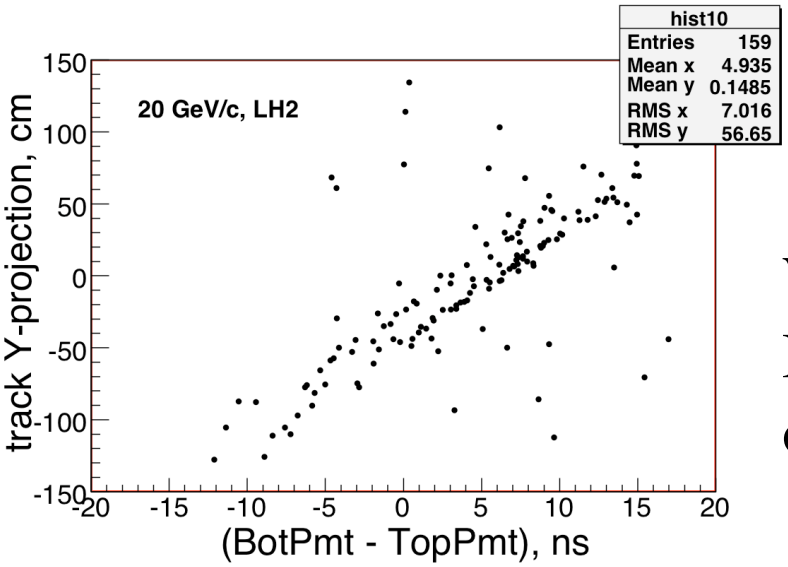


trkY vs TDCdifference

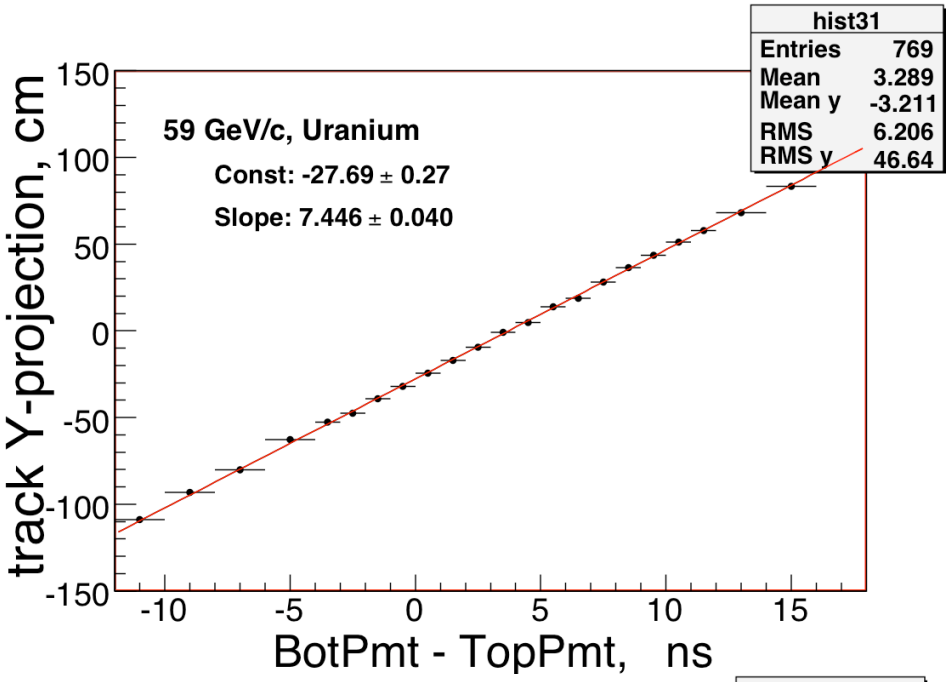
Slope=propagation speed

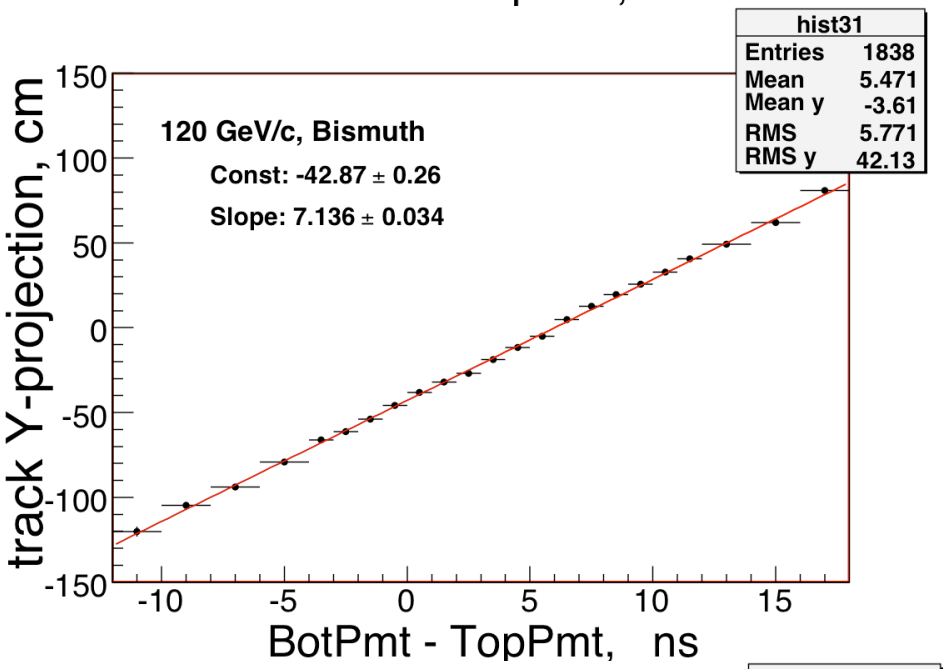
Need to fit for each bar & use this to account for time of propagation in bar

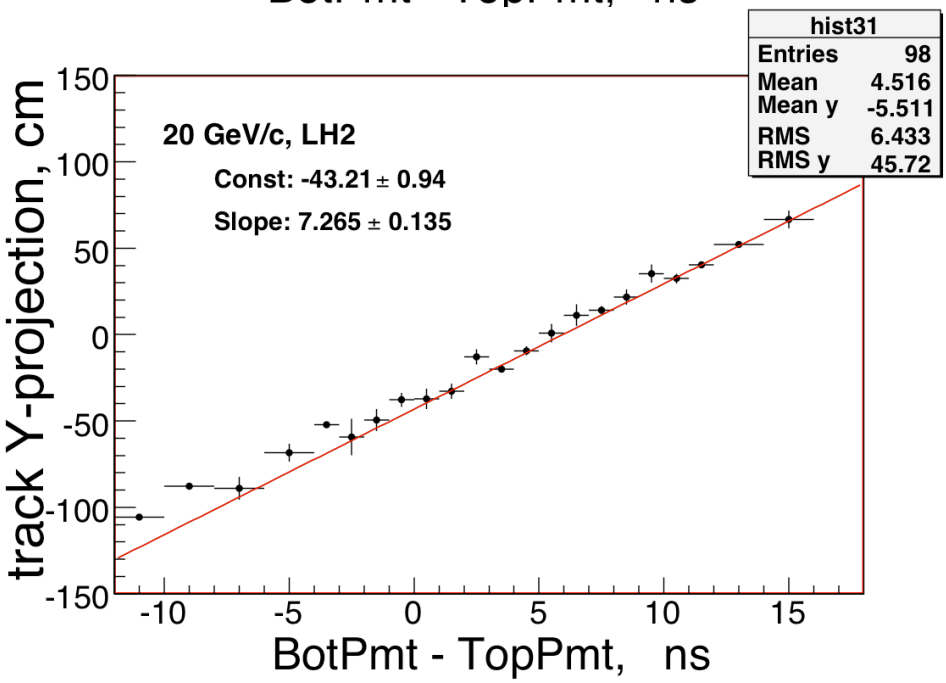




Why the structure in the LH2 data and not others?





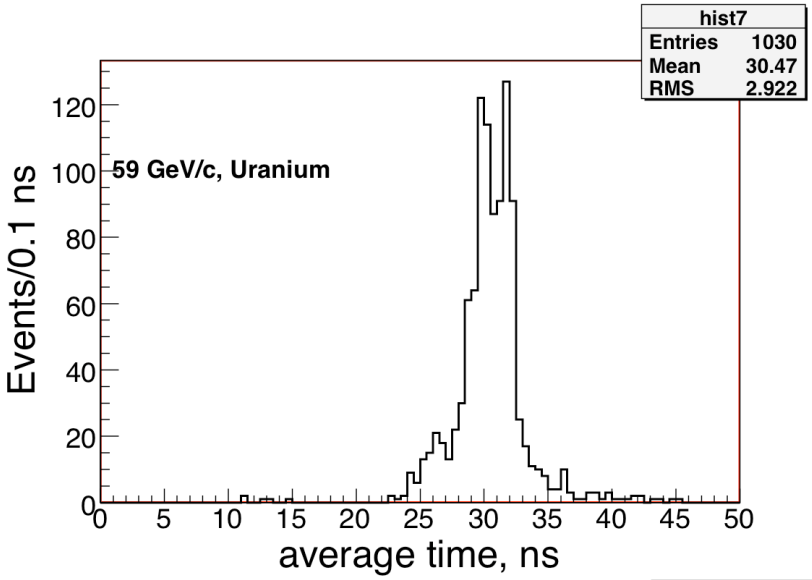


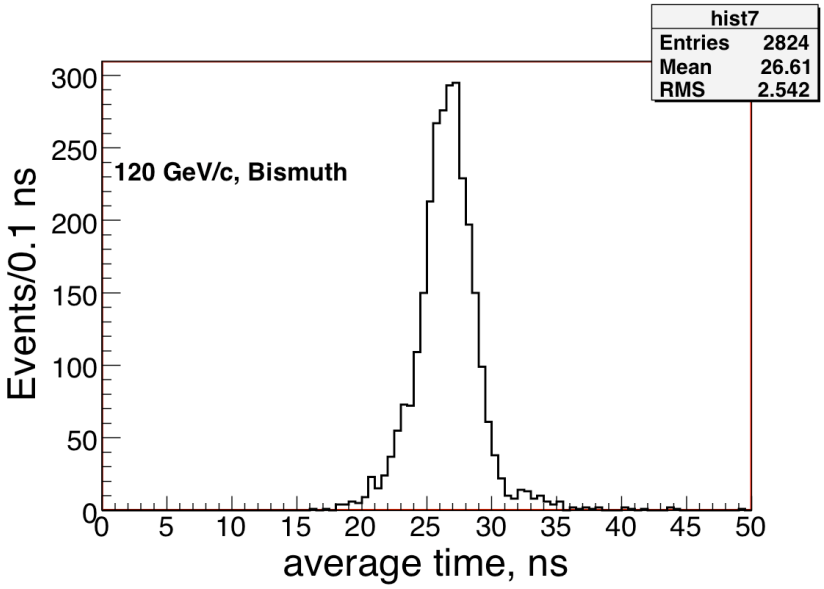
Slope ≈ 7 cm/ns

In TOF2007.cxx

tdc=
[
botpmt→tdc
- evt→t0
- tofbar→ds/c +
*(-150.0-tofbar→y)/**16.7***
]

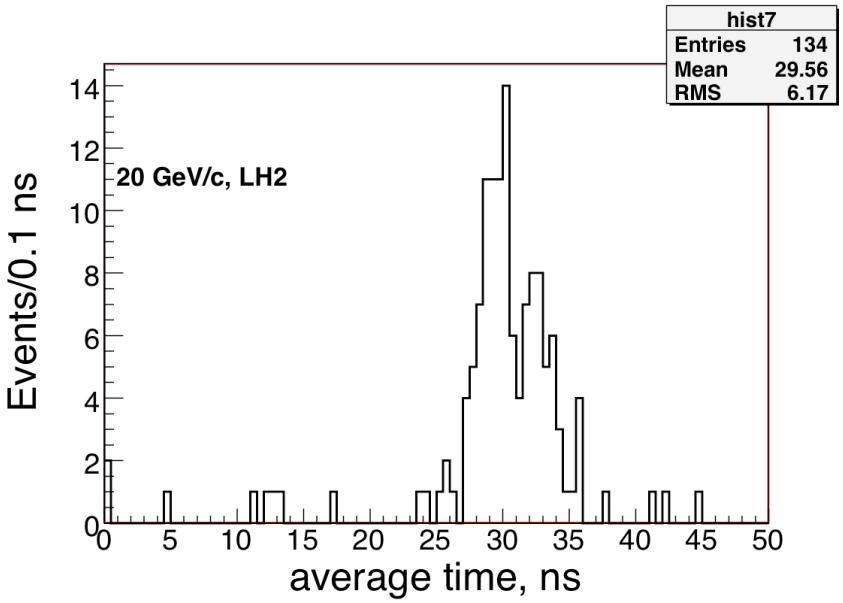
BTW:
No TOF constants in DB *tofcalib* for Runs > 16004?

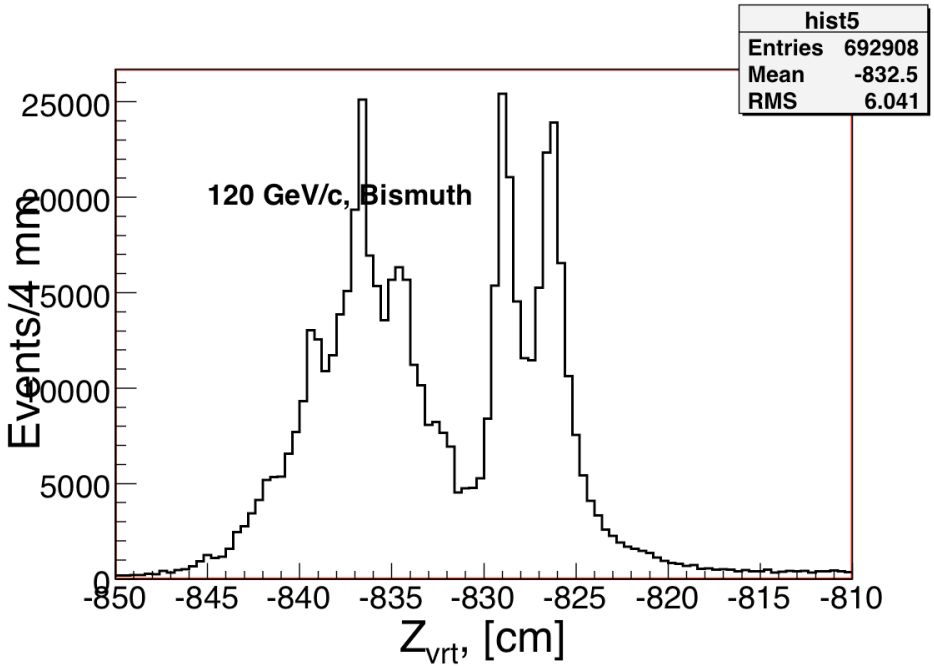




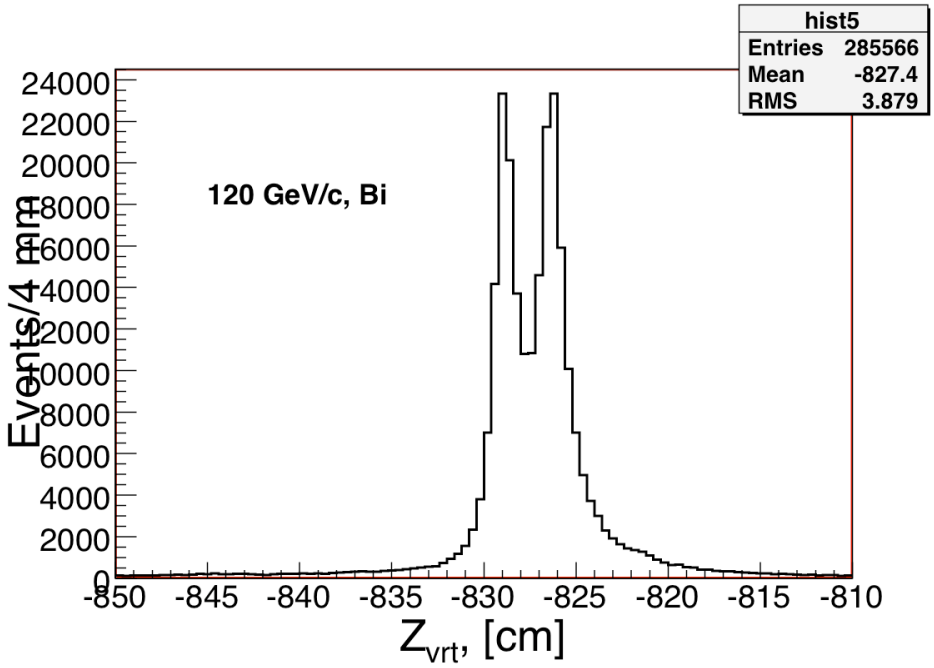
Average of top and bottom PMTs shows a double-peak not visible in (Top-Bottom)

Double-peak not seen in 120 GeV Bi?





All tracks in vtx



vtx→ntrk ≥ 2

Almost all codes in DSTAnalysis/TOF2007
are looping over only the tracks. This is dangerous.