

Weekly Meeting

2020/03/11

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WARP simulation

- Warp is Installed(?)
- Cannot run simulation scripts

```

trap@hep2011~/Downloads/Extraction
File "/home/trap/.local/lib/python2.7/site-packages/warp/warp.py", line 177, in <module>
Traceback (most recent call last):
  File "Einzel+EQT.py", line 19, in <module>
    from .warp import *
  File "/home/trap/.local/lib/python2.7/site-packages/warp/warp.py", line 177, in <module>
    from warp import *
Traceback (most recent call last):
  File "Einzel+EQT.py", line 19, in <module>
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  File "Einzel+EQT.py", line 19, in <module>
  File "/home/trap/.local/lib/python2.7/site-packages/warp/__init__.py", line 1, in <module>
    assert isdefmpiparallel(), "A serial version of warpC, %s, was imported into a parallel ru
n. Is PYTHONPATH correct?"%warpC.__file__
AssertionError: from warp import *
  File "/home/trap/.local/lib/python2.7/site-packages/warp/warp.py", line 177, in <module>
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(base) [trap@hep2011 Extraction]$

```

Time Resolution 5cm vs 10cm

Thickness

- 10cm

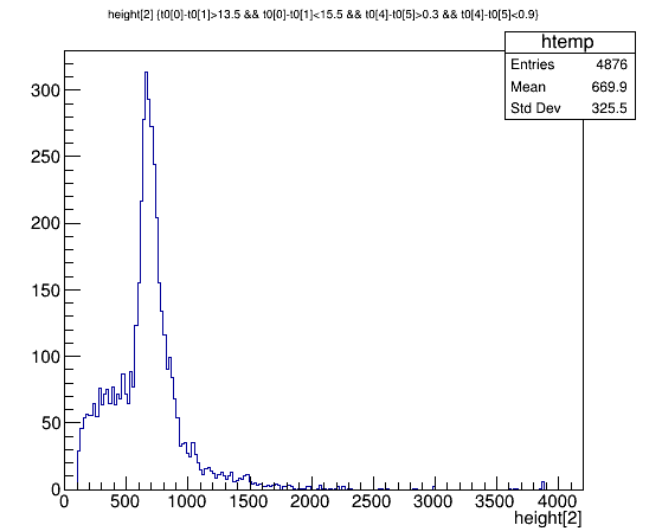
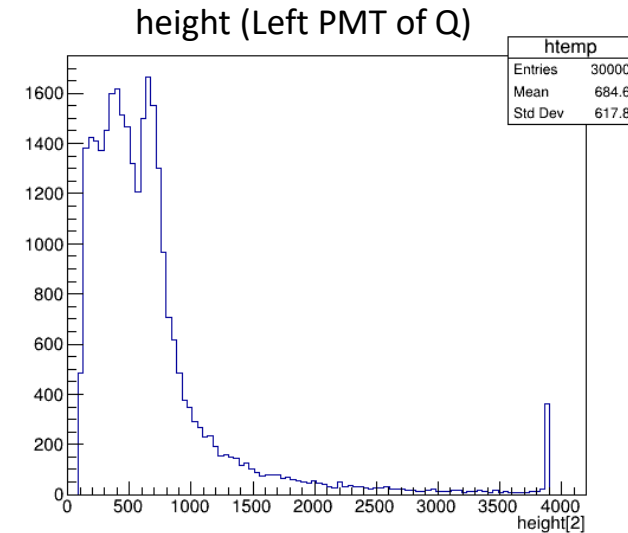
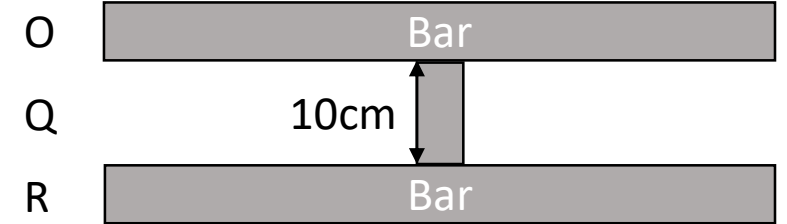
Position

- $0 \pm 2.5\text{cm}$

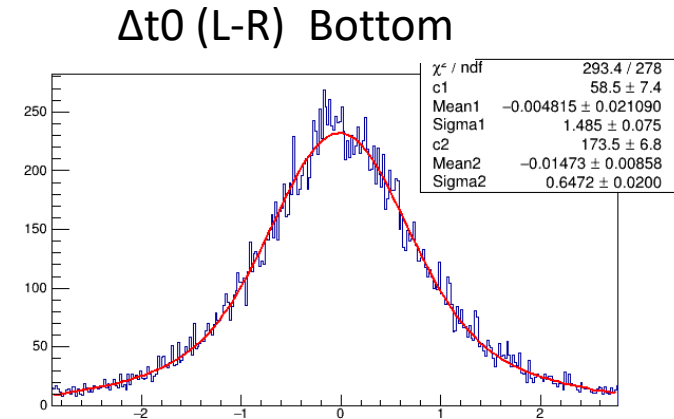
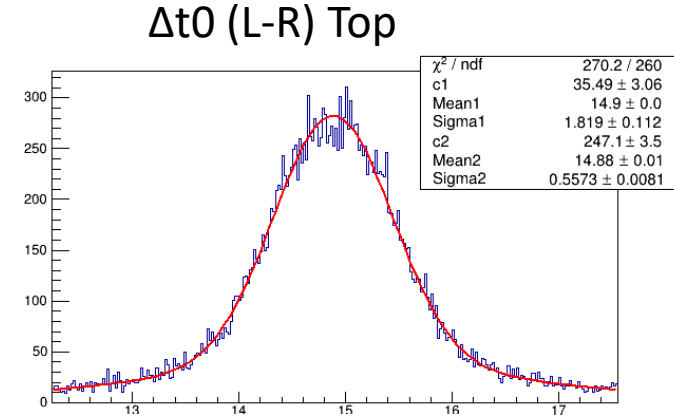
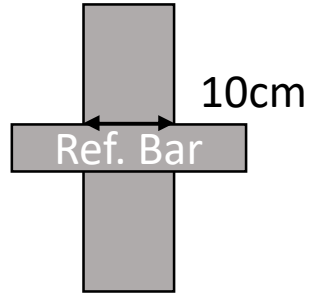
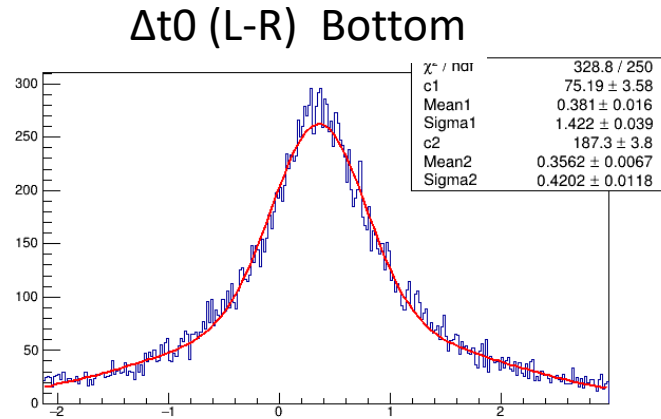
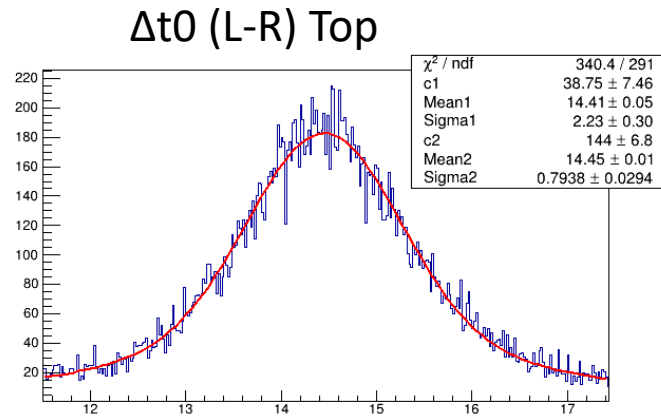
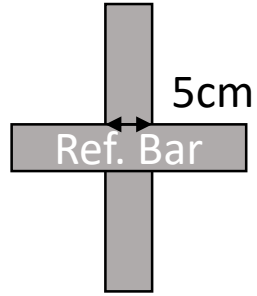
Event Selection (rule out low energy)

- Top/Bottom

$$\Delta t_0 (\text{Left} - \text{Right}) < \text{FWHM}$$



Time Resolution 5cm vs 10cm

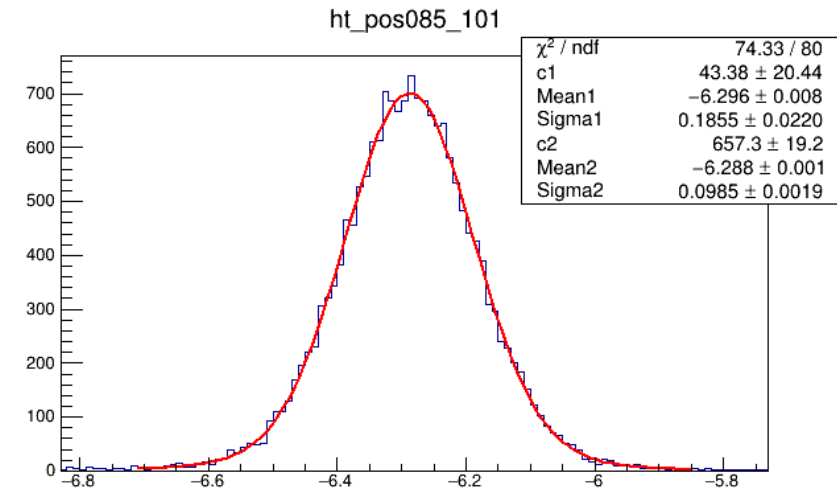
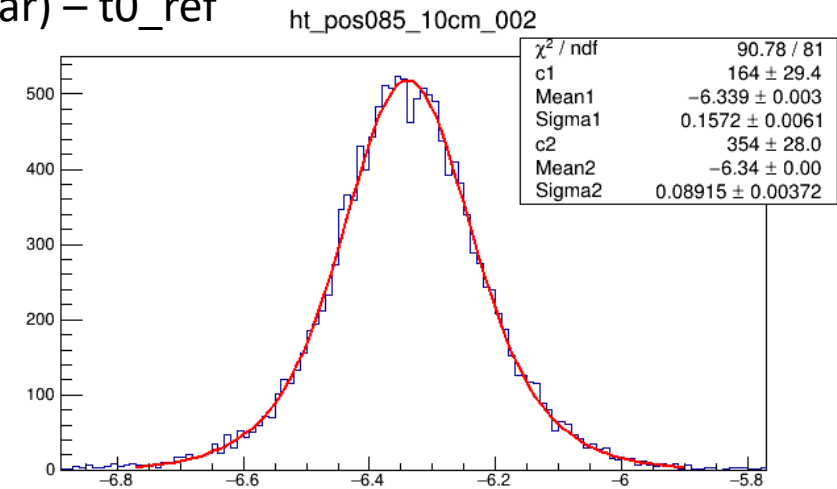


Time Resolution 5cm vs 10cm

Two Gaussian(gaus + gaus) Fitting

- # of events : 30,000
- dt cut : Δt_0 (Left – Right) < FWHM (top, mid, bot)
- Position : $85\text{cm} \pm 2.5\text{cm}$
- Sigma (narrow) : (10cm) 89ps / (5cm) 99ps
- chisqr / ndf : (10cm) 1.12 / (5cm) 0.93

$t_{0\text{avg}}(2^{\text{nd}} \text{ bar}) - t_{0_ref}$



Time Resolution Lin vs Bes

Calculation Method

- $t_{\text{avg}}(\text{top}) - t_{\text{avg}}(\text{mid}) \dots$

$$\sigma_1 = \sqrt{(+\sigma_a^2 - \sigma_b^2 + \sigma_c^2)/2}$$

$$\sigma_2 = \sqrt{(+\sigma_a^2 + \sigma_b^2 - \sigma_c^2)/2}$$

$$\sigma_3 = \sqrt{(-\sigma_a^2 + \sigma_b^2 + \sigma_c^2)/2}$$

```
f : /data/TimeResPos/Position_GHFvteYT001.root
sigma 0 :0.155645
sigma 1 :0.145777
sigma 2 :0.183212
Time Resolution 0 : 133.685+-1.67018[ps]
Time Resolution 1 : 73.5753+-3.0347[ps]
Time Resolution 2 : 120.947+-1.84608[ps]
Time Resolution avg : 112.418+-1.1467[ps]
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