

Update: Layer 1 (Long and Short Straws)

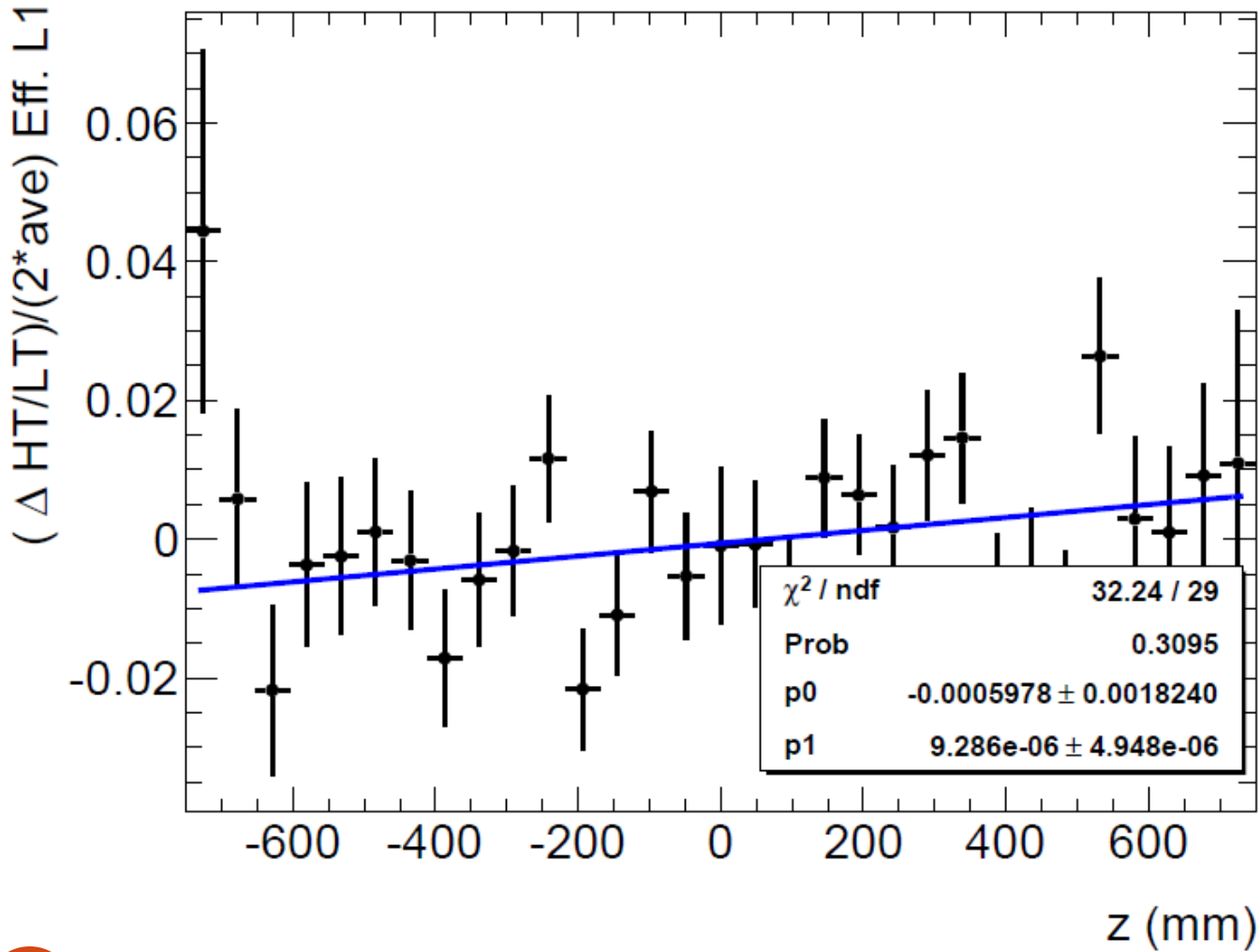
Ben Weinert

Note

- At last weeks meeting it was brought up that I should divide Layer 1 into short and long straws.
- Here are the updated plots for Layer 1.

Period F 2011 Data: Layer 1

$\Delta(\text{HT}/\text{LT})/(2 * \text{Ave}(\text{HT}/\text{LT}))$ Layer 1 Long

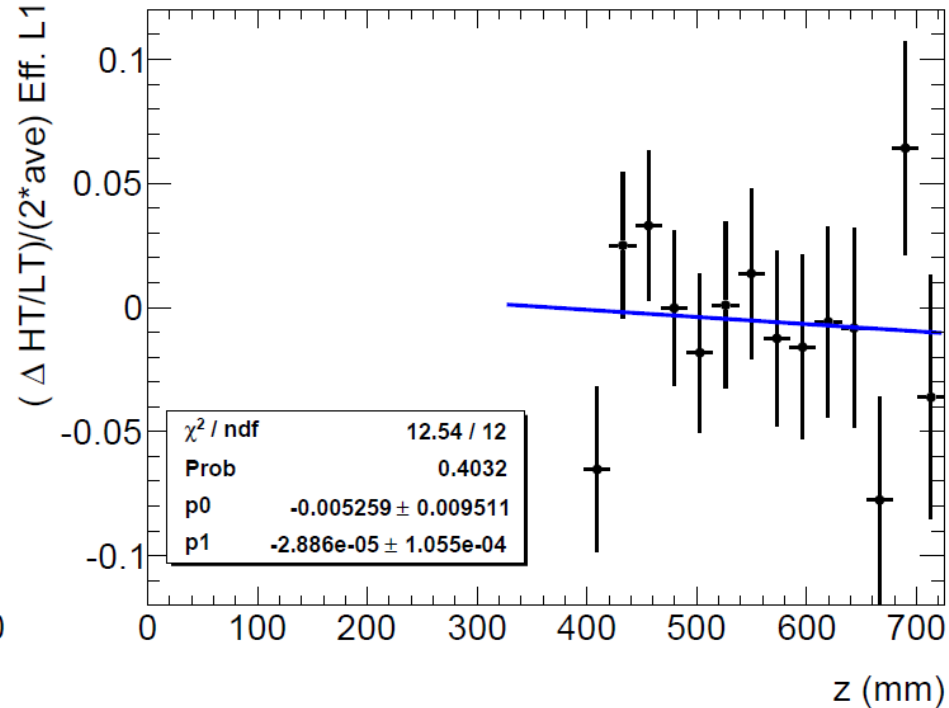
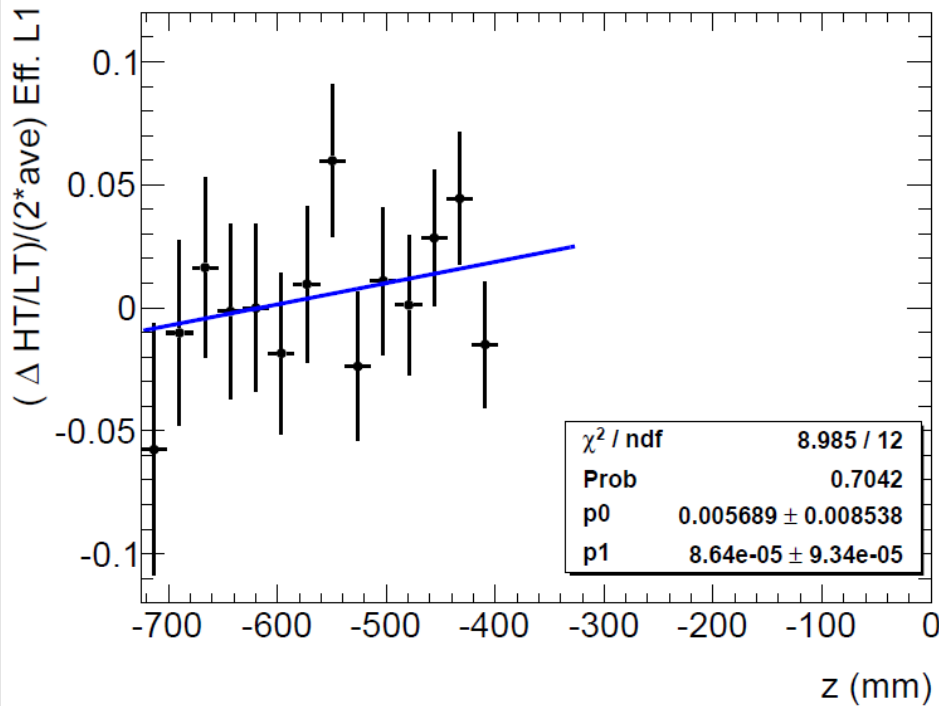


Slope: $9.286 * 10^{-6}$
 $\pm 4.948 * 10^{-6}$

$\Delta(\text{HT}/\text{LT})/(2 * \text{Ave}(\text{HT}/\text{LT}))$ Layer 1 Short

Negative

Positive



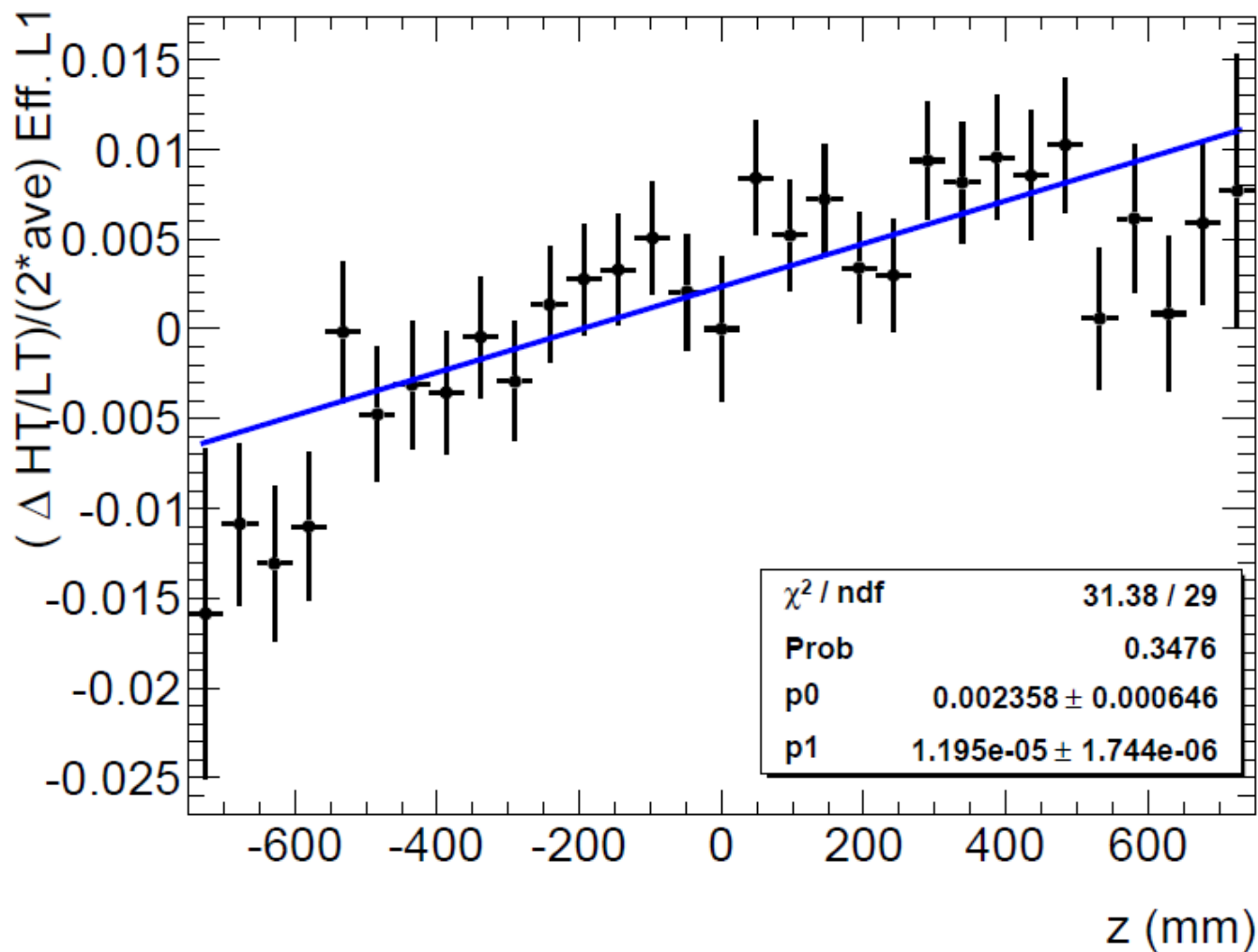
Neg. Slope : $8.64 * 10^{-5} \pm 9.34 * 10^{-5}$

Pos. Slope : $-2.886 * 10^{-5} \pm 10.55 * 10^{-5}$

Long Straw Slope: $.9286 * 10^{-5} \pm .4948 * 10^{-5}$

Period M 2011 Data: Layer 1

$\Delta(\text{HT}/\text{LT})/(2 * \text{Ave}(\text{HT}/\text{LT}))$ Layer 1 Long

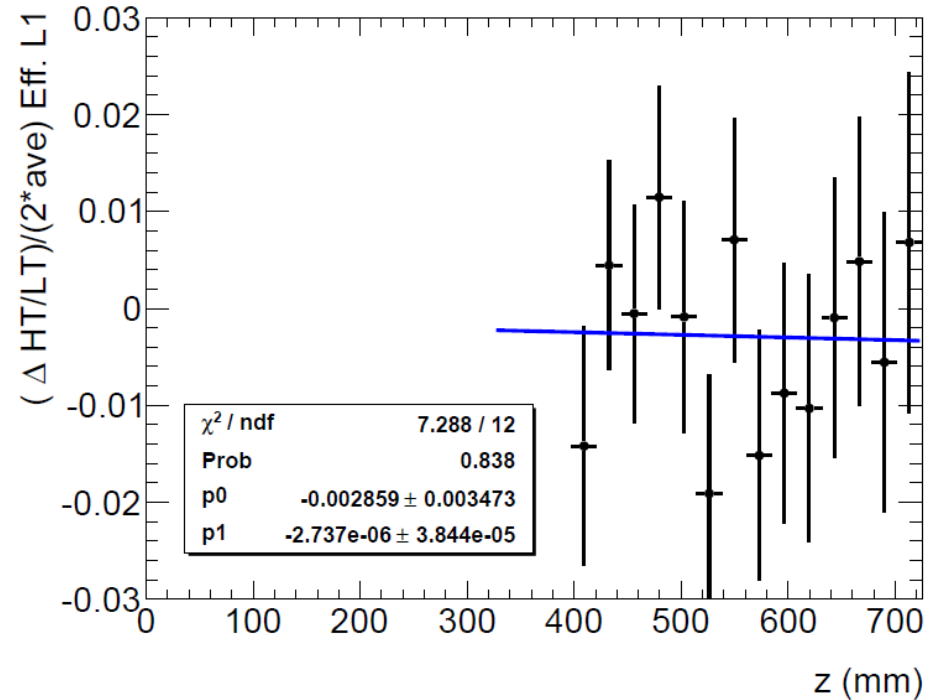
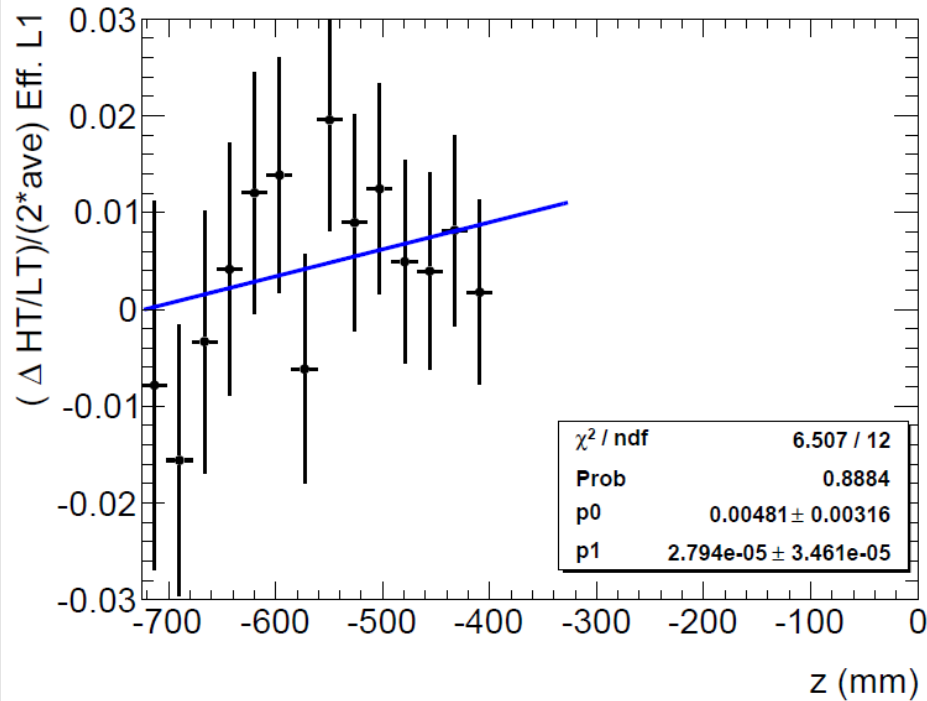


Slope: $1.195 * 10^{-5}$
+/- $.1744 * 10^{-5}$

$\Delta(\text{HT}/\text{LT})/(2 * \text{Ave}(\text{HT}/\text{LT}))$ Layer 1 Short

Negative

Positive



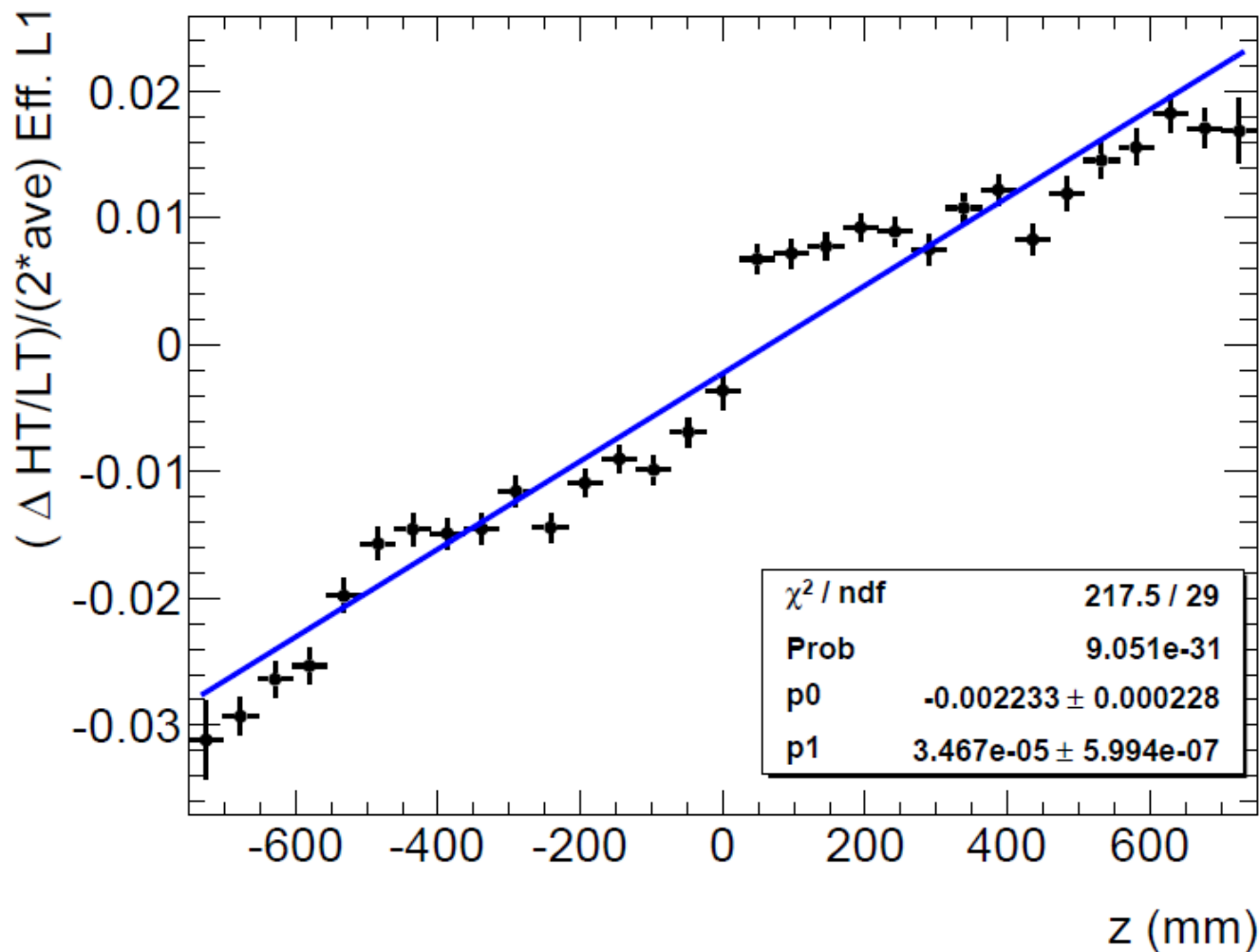
Neg. Slope : $2.794 * 10^{-5} \pm 3.461 * 10^{-5}$

Pos. Slope : $-.2737 * 10^{-5} \pm 3.844 * 10^{-5}$

Total Slope: $1.195 * 10^{-5} \pm .1744 * 10^{-5}$

Period B 2012 Data: Layer 1

$\Delta(\text{HT}/\text{LT})/(2 * \text{Ave}(\text{HT}/\text{LT}))$ Layer 1 Long

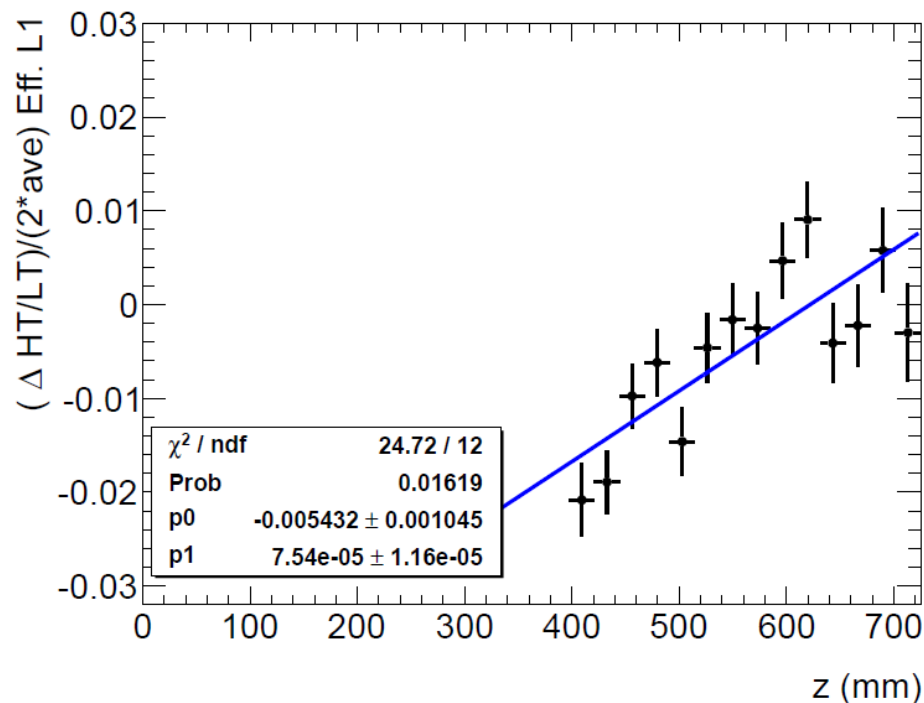
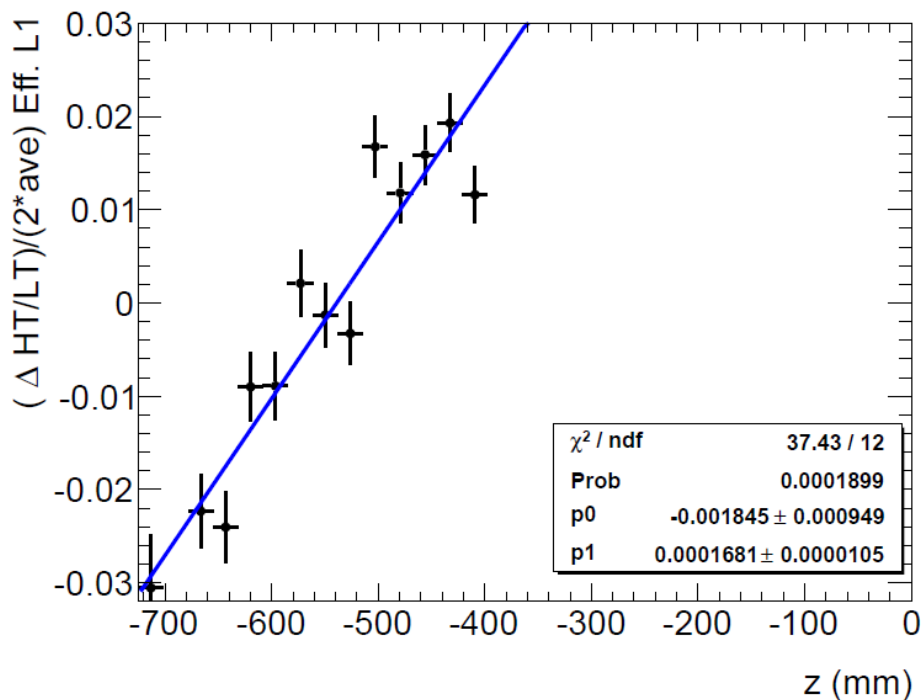


Slope: $3.467 * 10^{-5}$
 $\pm 5.994 * 10^{-7}$

$\Delta(\text{HT}/\text{LT})/(2 * \text{Ave}(\text{HT}/\text{LT}))$ Layer 1 Short

Negative

Positive



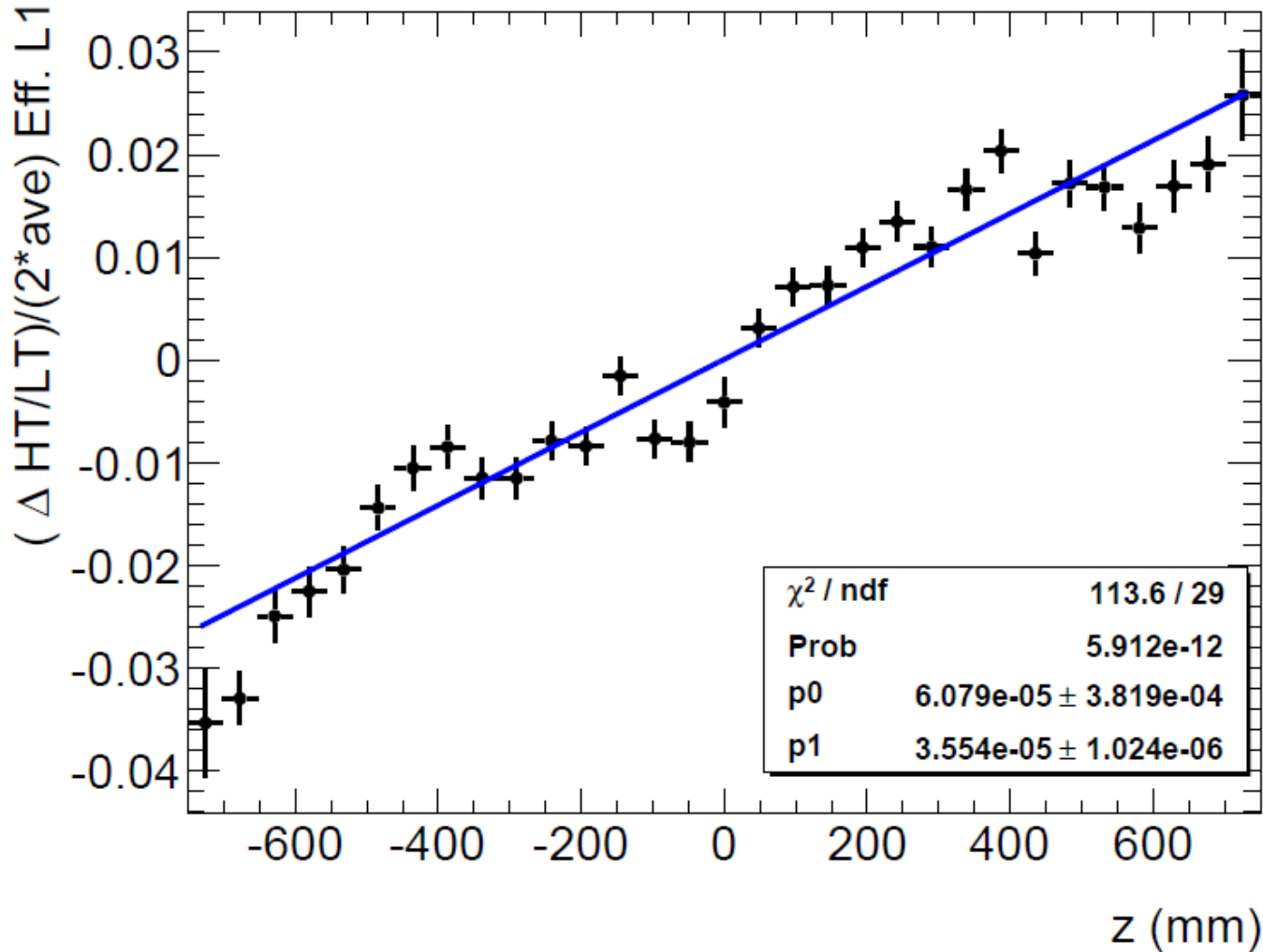
Neg. Slope : $16.81 * 10^{-5} \pm 1.05 * 10^{-5}$

Pos. Slope : $7.54 * 10^{-5} \pm 1.16 * 10^{-5}$

Total Slope: $3.467 * 10^{-5} \pm .05994 * 10^{-5}$

Period E 2012 Data: Layer 1

$\Delta(\text{HT}/\text{LT})/(2*\text{Ave}(\text{HT}/\text{LT}))$ Layer 1 Long

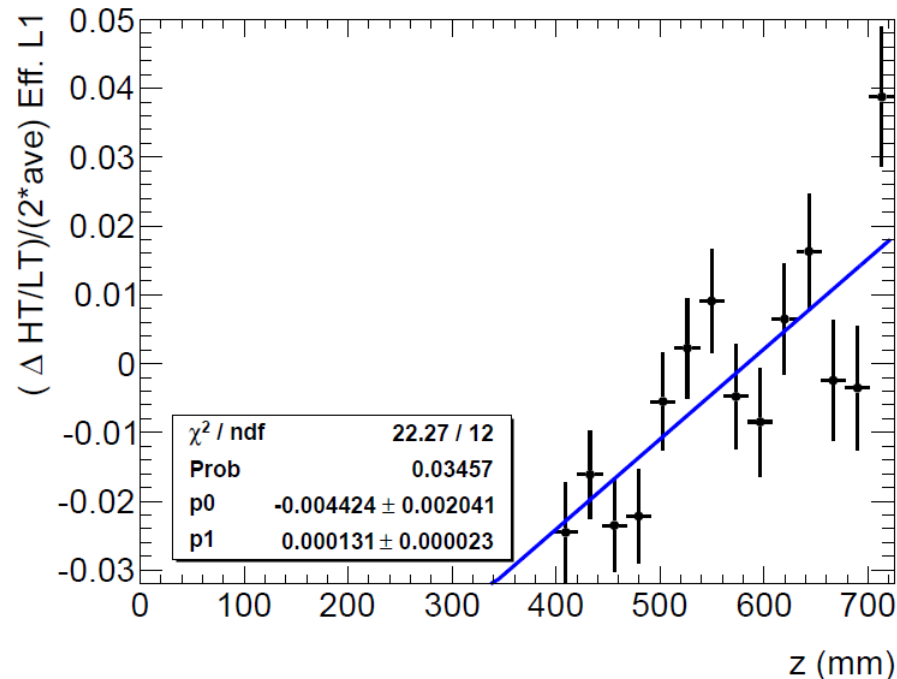
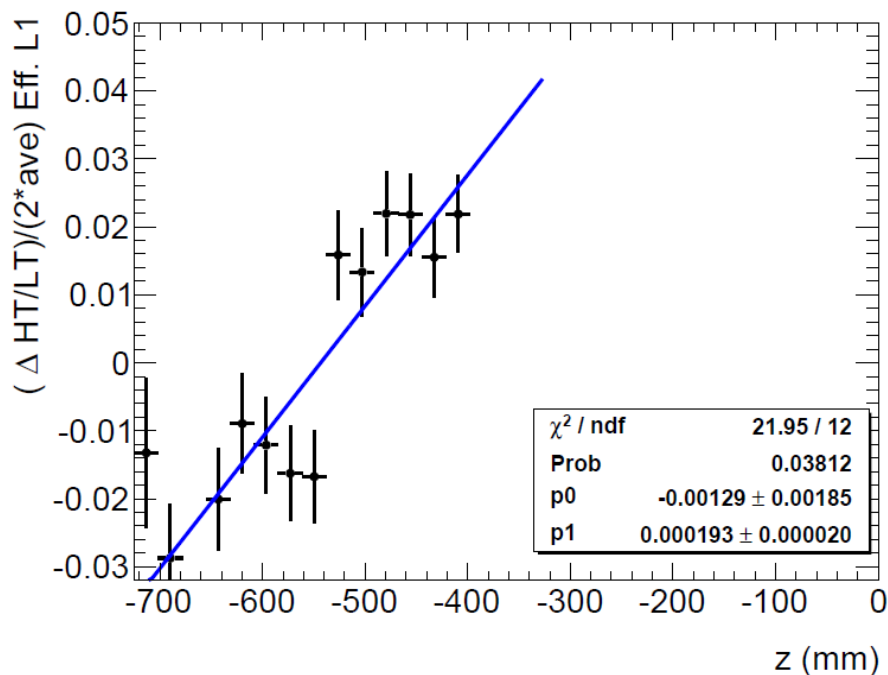


Slope: $3.554*10^{-5}$
+/- $1.024*10^{-6}$

$\Delta(\text{HT}/\text{LT})/(2 * \text{Ave}(\text{HT}/\text{LT}))$ Layer 1 Short

Negative

Positive

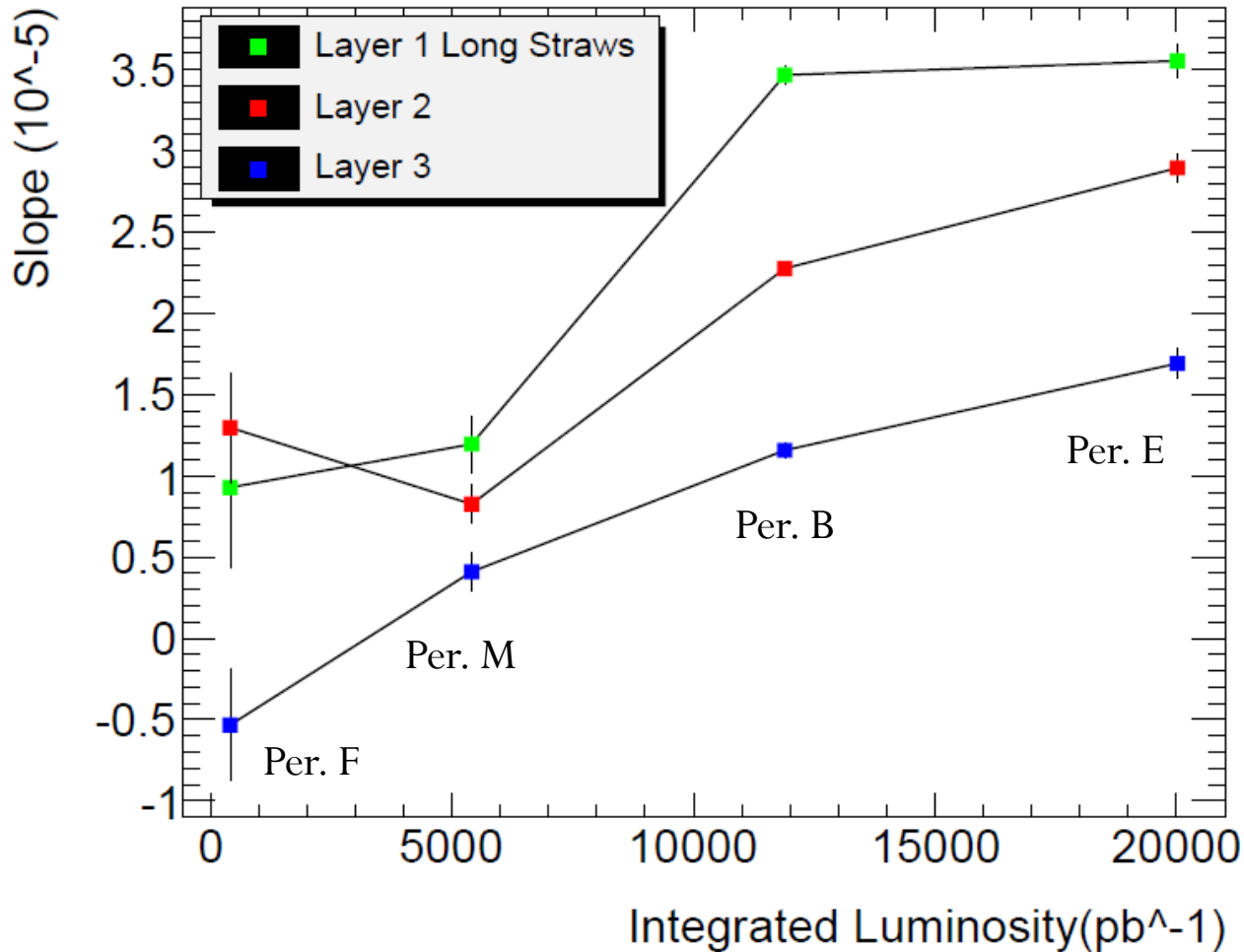


Neg. Slope : $19.3 * 10^{-5} \pm 2.00 * 10^{-5}$

Pos. Slope : $13.1 * 10^{-5} \pm 2.3 * 10^{-5}$

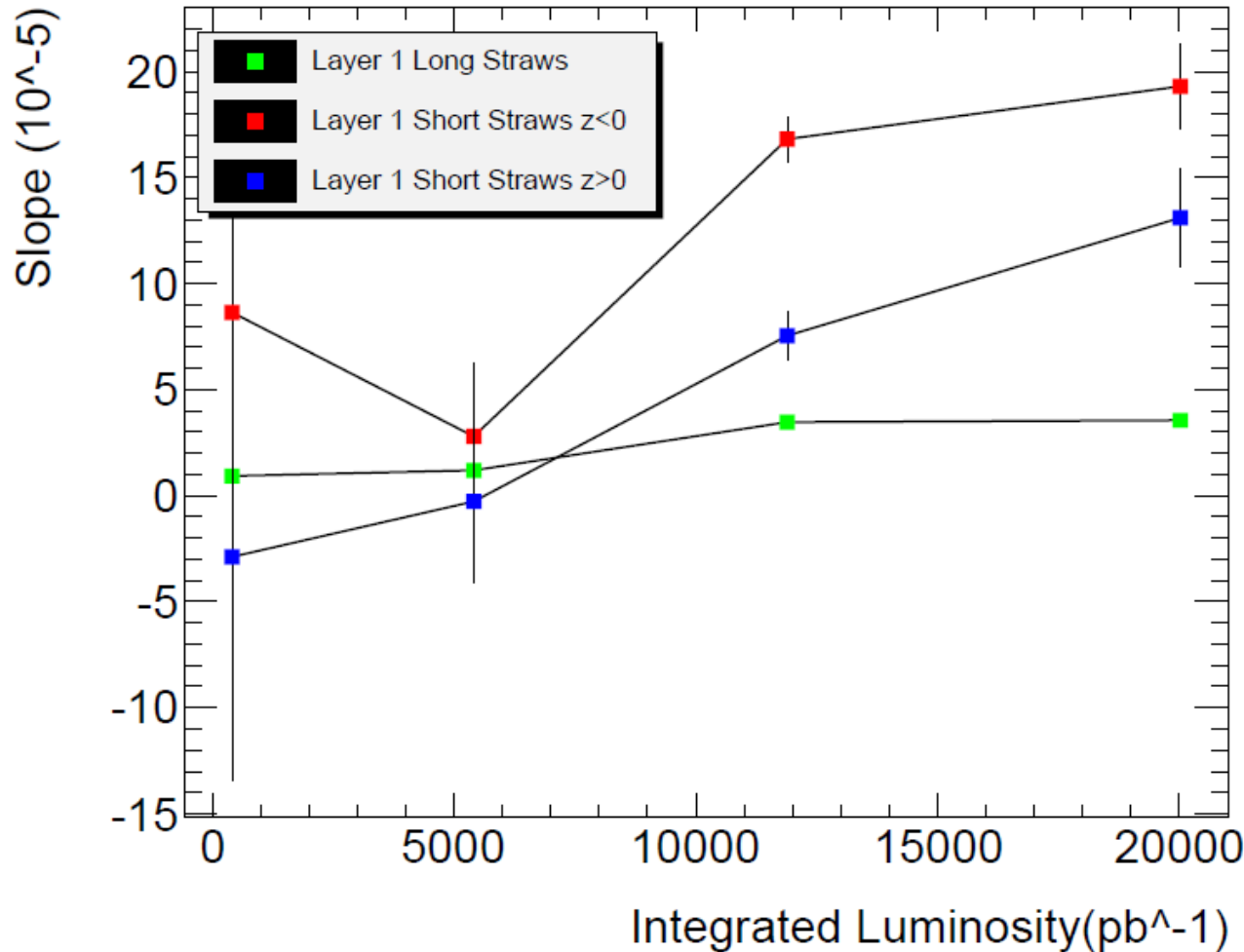
Total Slope: $3.554 * 10^{-5} \pm .1024 * 10^{-5}$

Slope vs. Integrated Luminosity



- There does seem to be a rising trend with integrated luminosity.
- Although not a perfect fit, this could indicate an aging effect.
- After looking at only the long straws in layer 1 we see that it has the largest effect, which is expected.

Slope vs. Integrated Luminosity Layer 1



- Here we have the slope vs. integrated luminosity of the Long straws, and positive and negative short straws.
- We see a much stronger effect in the short straws in the 2012 data periods.