

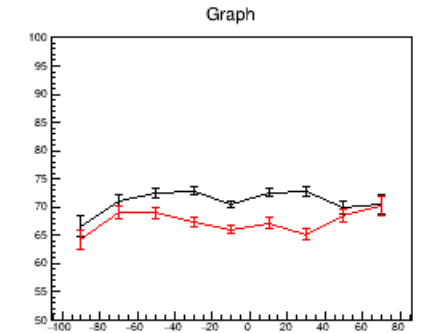
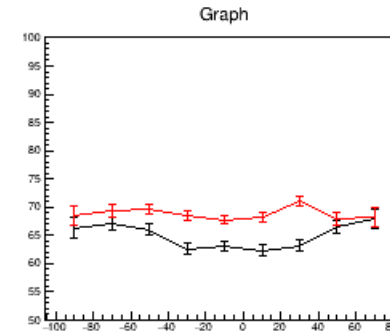
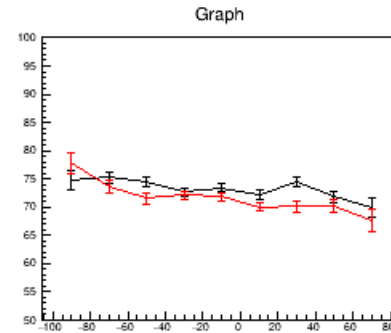
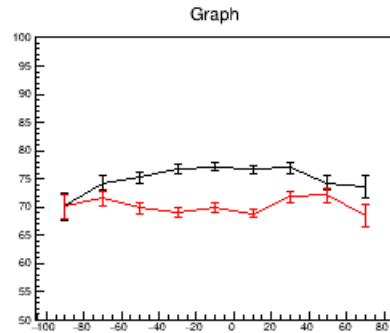
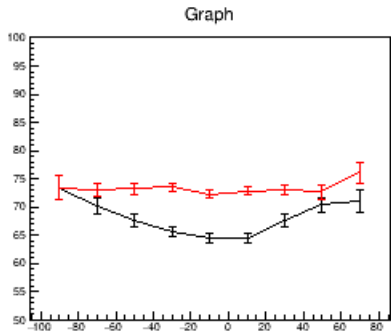
190610

ByungChan lee

Time Resolution

- Hit Number = 12, cosine > 0.85, $\chi^2/\text{ndf} < 4$
- Number of events = 4,000,000
- Position Cut = $\pm 10\text{cm}$
- Bar 2~5

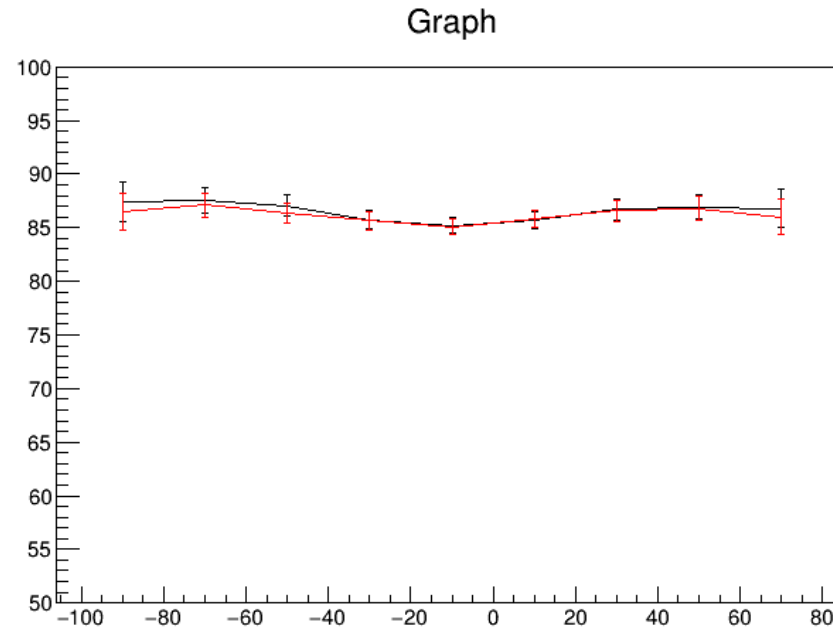
- Group (1,2,3 / 4,5,6)
- Group (2,3,4 / 5,6,7)



Time Resolution

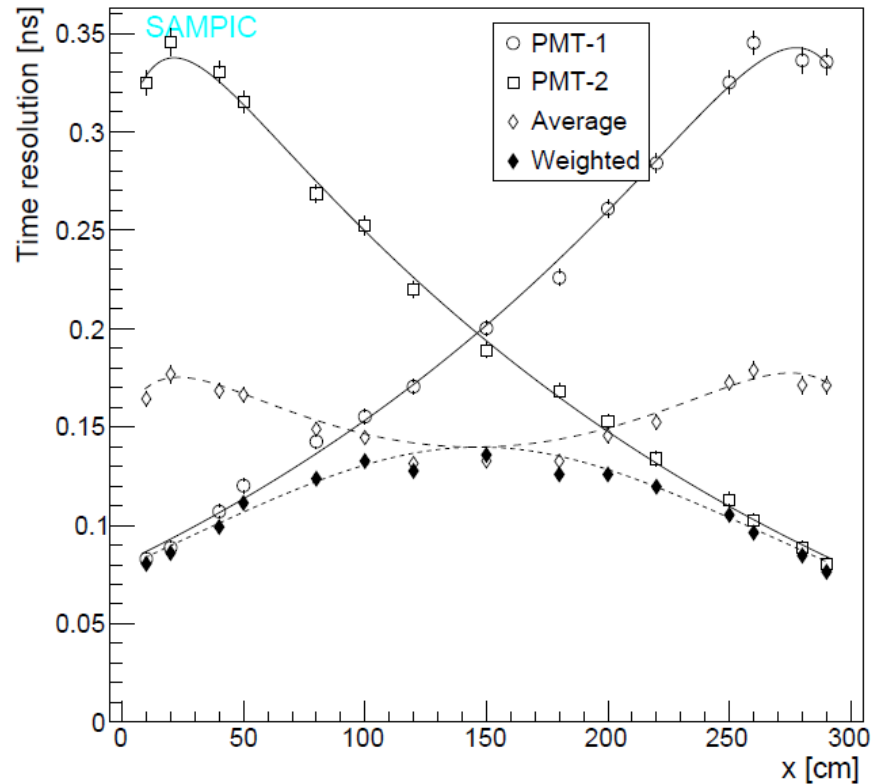
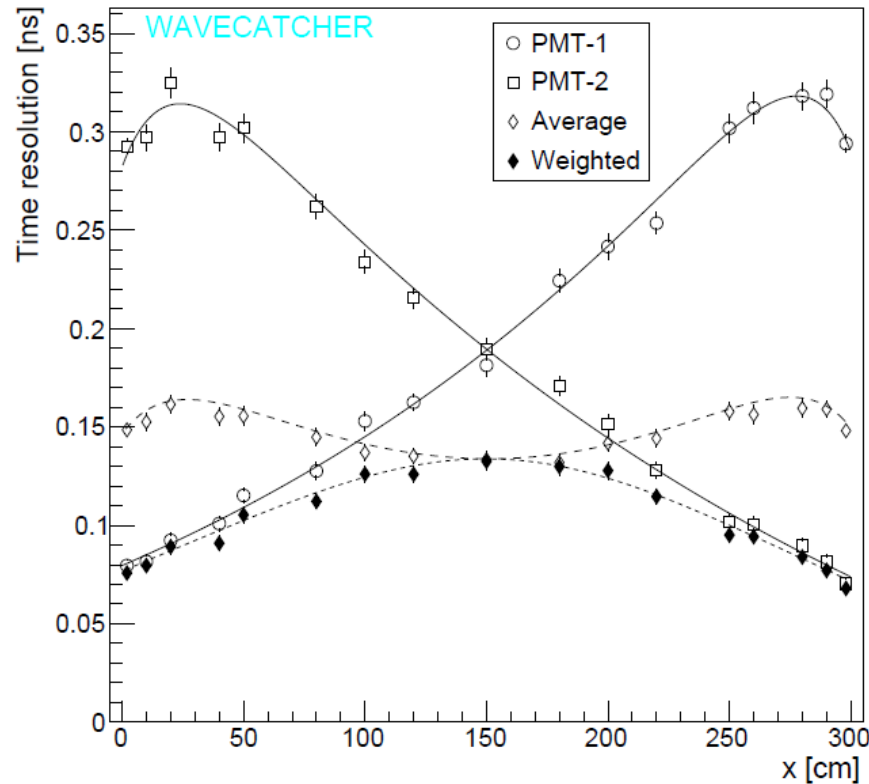
- $\sigma_{avg} = \sqrt{\frac{\sum \sigma_i^2}{N(bar)}}$

- $E_{avg} = \frac{\sqrt{\sum \left(\frac{\sigma_i}{\sigma_{avg}}\right)^2 E_i^2}}{N(bar)}$



Need to modify..

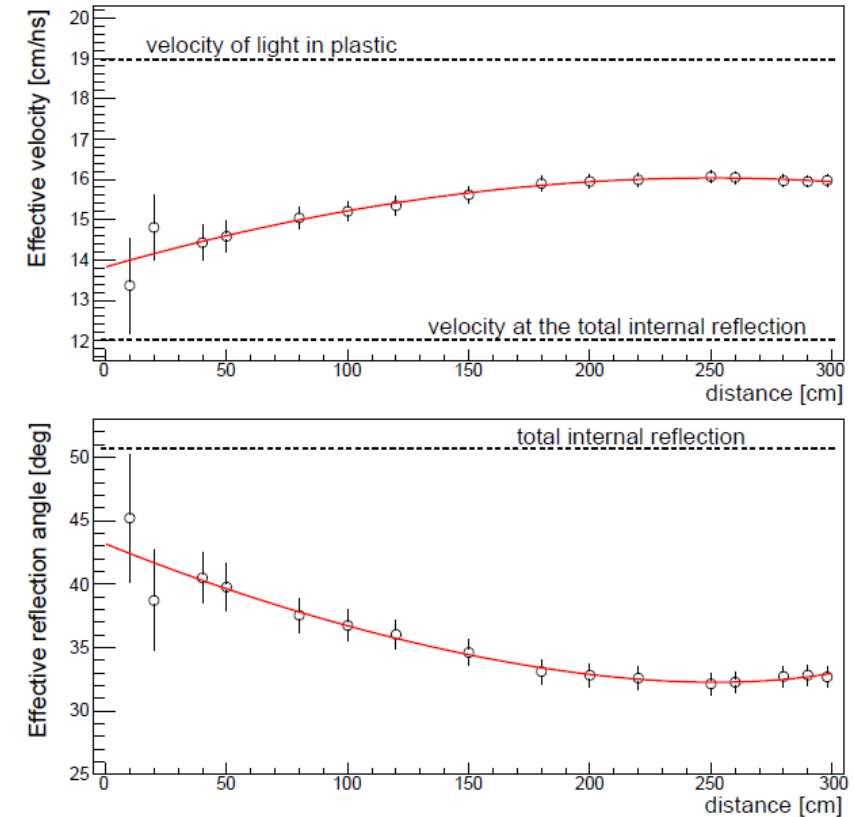
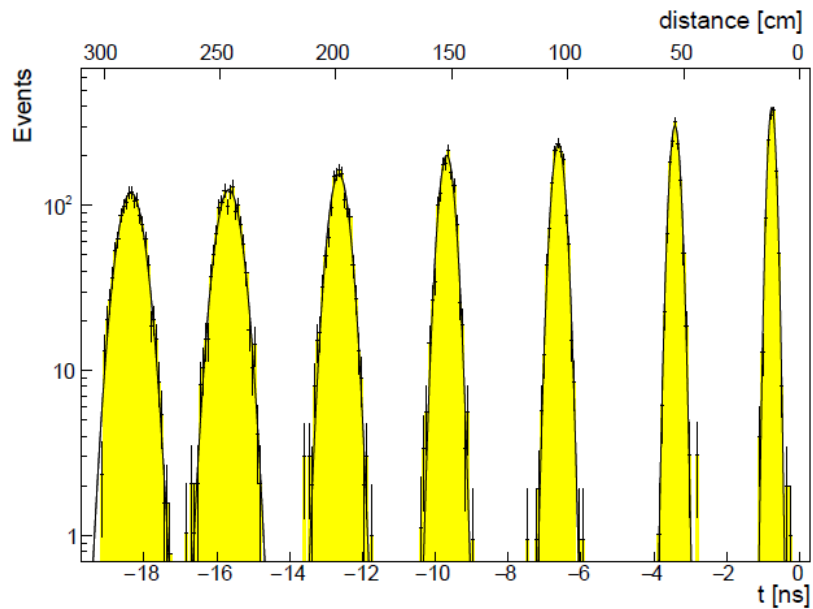
Time Resolution – Position Dependence



A. Blondel, D. Breton, A. Dubreuil, A. Khotyantsev, A. Korzenev, J. Maalmi et al., Study of timing characteristics of a 3 m long plastic scintillator counter using waveform digitizers, Nucl. Instrum. Meth. A877 (2018) 9–15, [1610.05667]

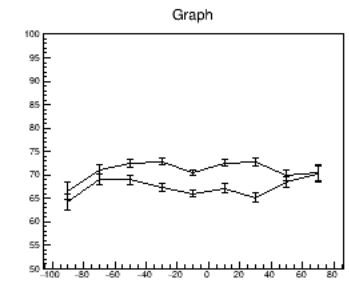
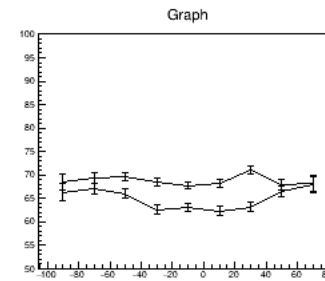
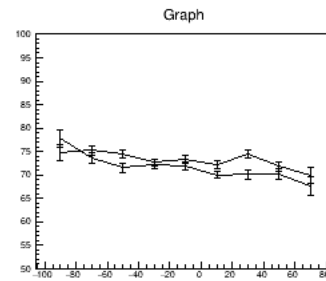
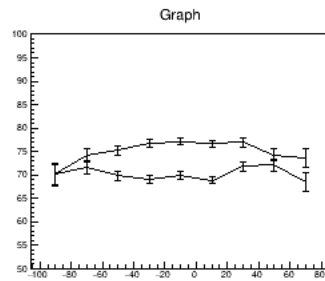
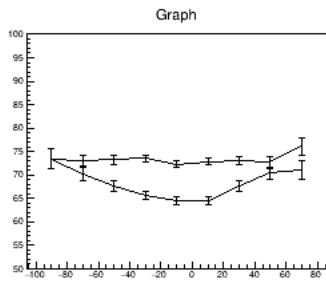
Time Resolution – Position Dependence

- Time resolution, velocity of light have position dependency



BackUp

- Hit Number = 12, cosine > 0.85
- Number of events = 4,000,000
- Bar 2~5
- Position Cut = ± 5 cm



BackUp

- dT distribution Fitting

