

190723

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Position Dependence – with External trigger

PWO : $2 \times 2 \times 20$ [cm]



Calculate Reference time from PWO

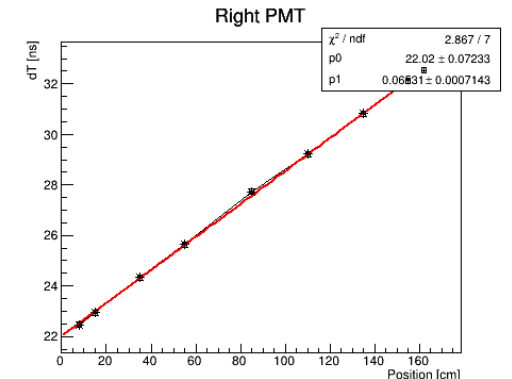
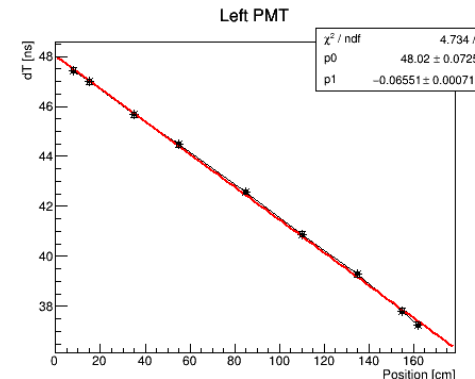
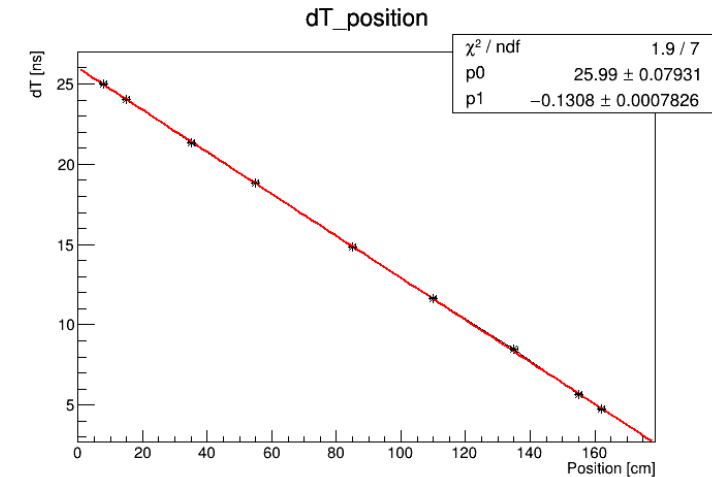
: $T_{ref} = (t0[up] + t0[down]) / 2$

- $t0[left] - T_{ref}$
- $t0[right] - T_{ref}$

Speed of light (left PMT) : 15.27 ± 0.17 cm/ns

Speed of light (right PMT) : 15.31 ± 0.17 cm/ns

Speed of light (dT) : 15.29 ± 0.09 cm/ns



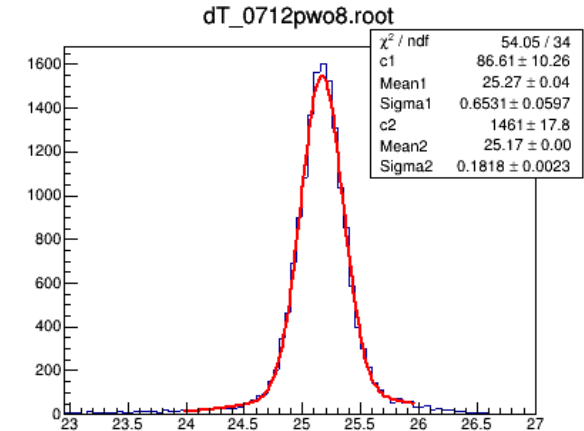
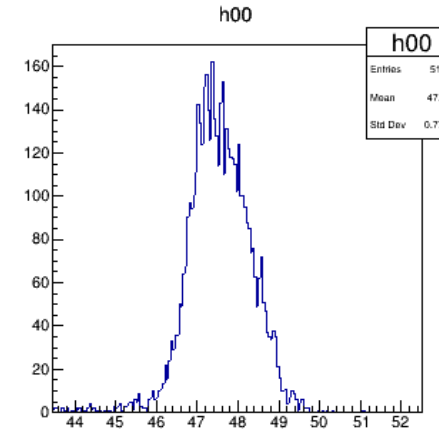
Position Dependence – with External trigger

Graph FWHM

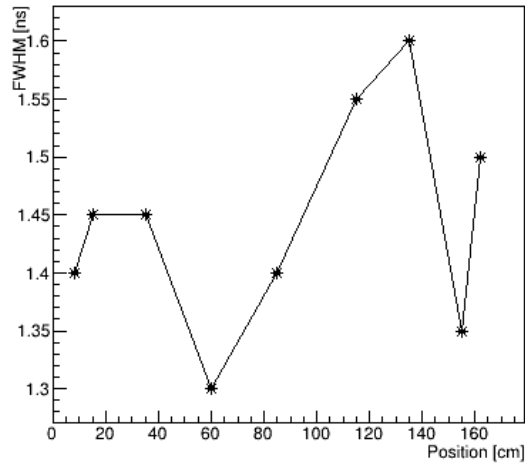
1bin = 50ps

No sign of position dependency

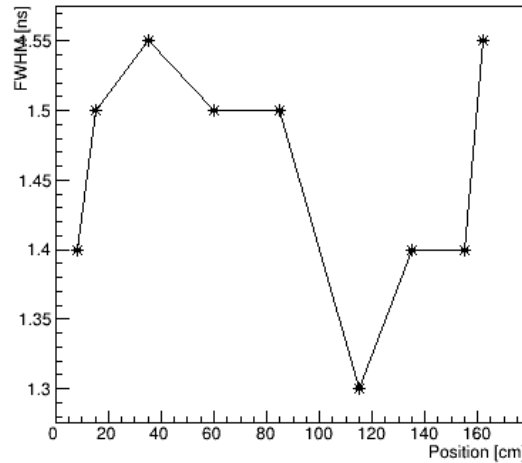
*FWHM of pwo dT histogram (t0[up]-t0[down]) : ~1.6ns



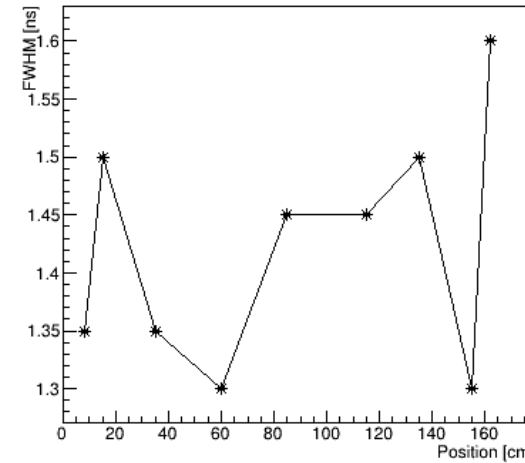
Left PMT



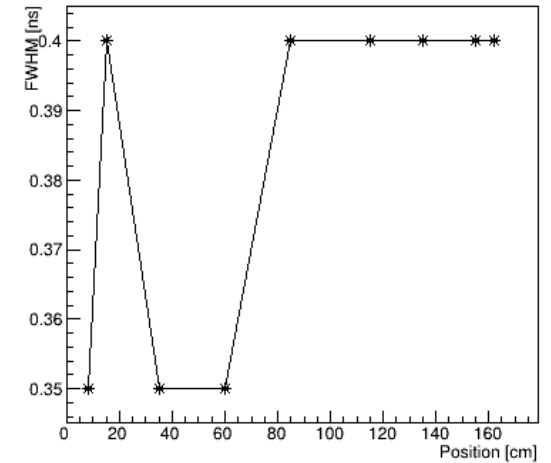
Right PMT



(t0+t1)/2



dT

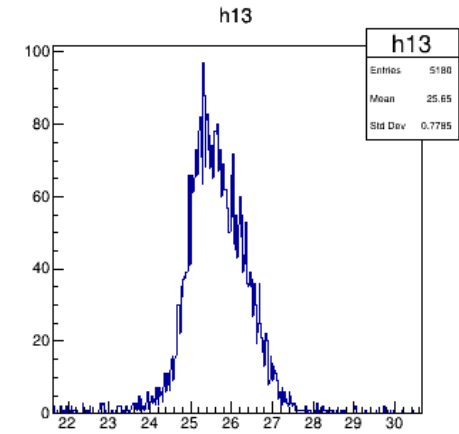
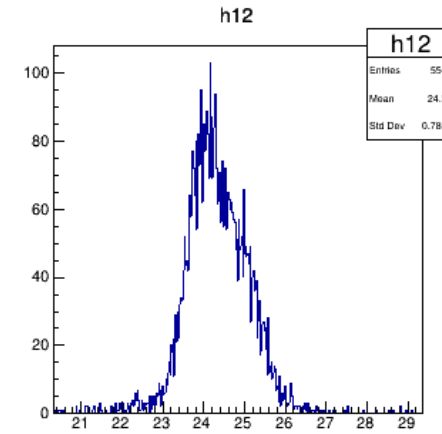
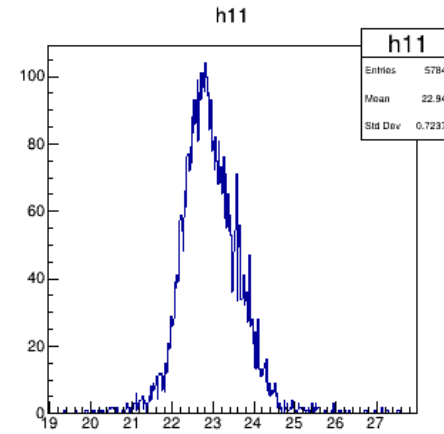


Maximum – minimum = ~300ps

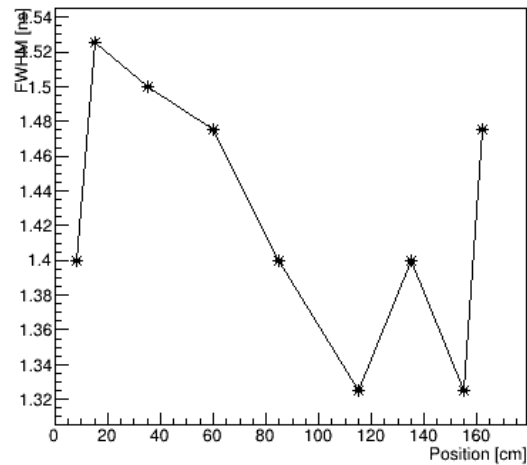
~50ps

Back Up – change bin number

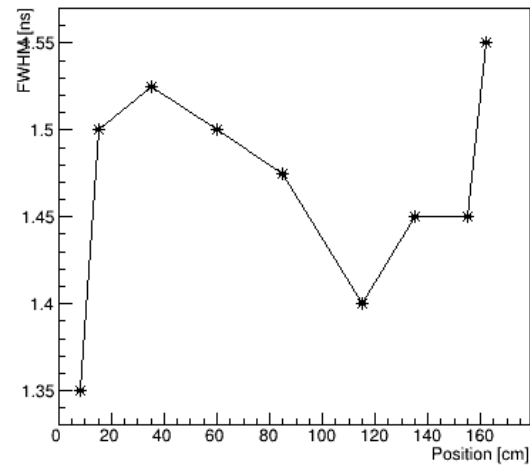
1bin = 25ps



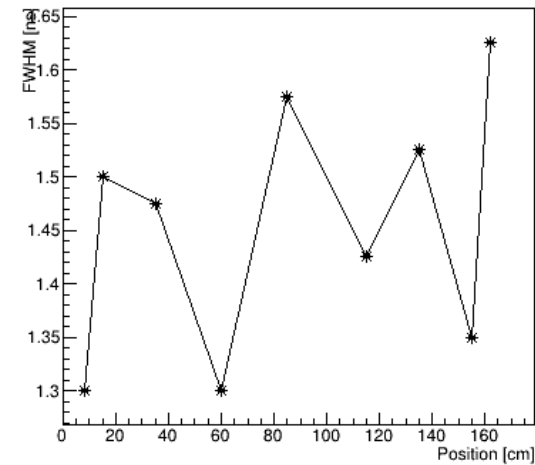
Left PMT



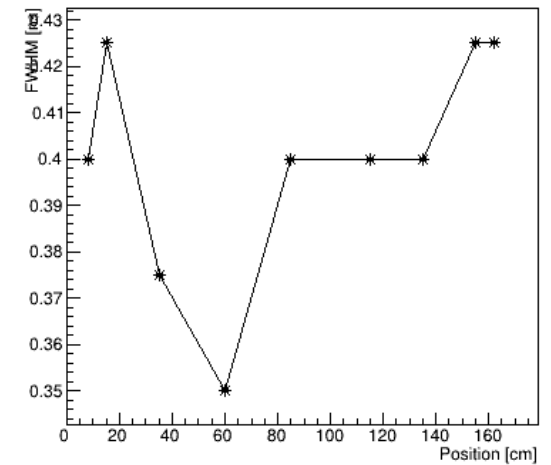
Right PMT



$(t0+t1)/2$



dT



Back Up – FWHM of PWO

$t_0[\text{up}] - t_0[\text{down}]$

