

BigBite proton detection efficiency

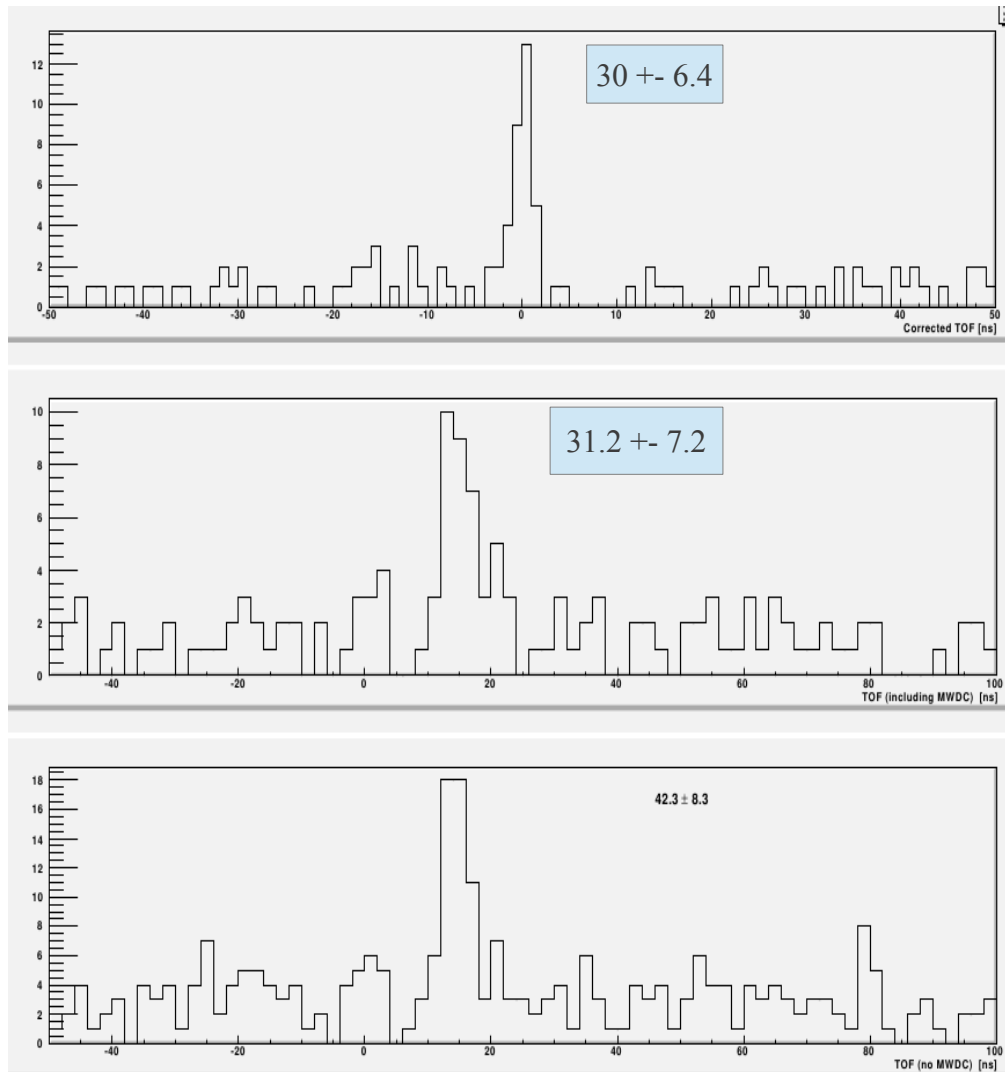


fig 1: 750 MeV/c. From top to bottom: Corrected TOF, TOF with requirement of MWDC, TOF only scintillators.

$$\#e,e'pp \text{ (with track)} / \#(e,e'pp) \text{ (only scintillators)} \sim 74 \%$$

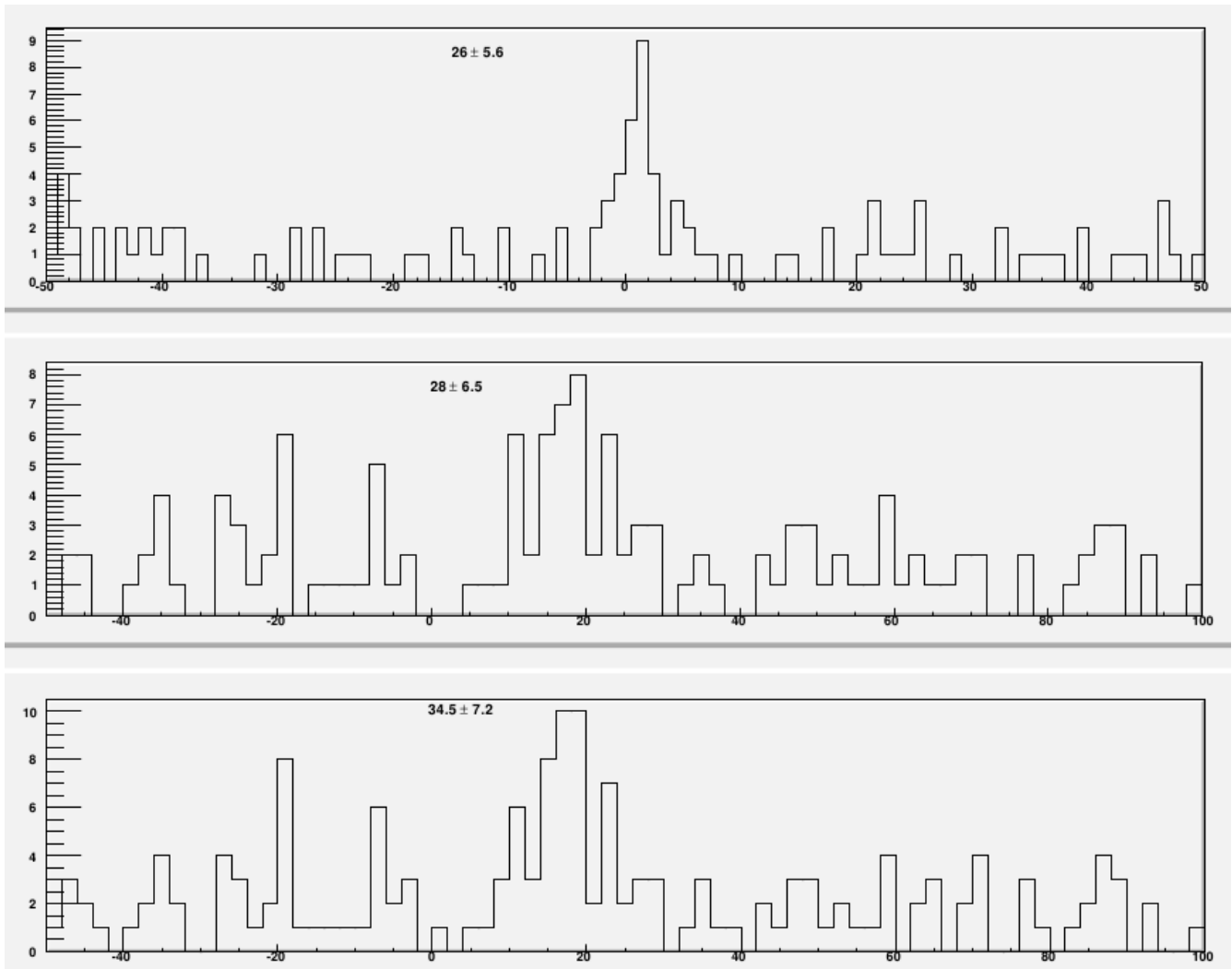


Fig 2: same as 1 for 625 MeV/c

$\#e,e'pp$ (with track) / $\#(e,e'pp)$ (only scintillators) $\sim 81\%$

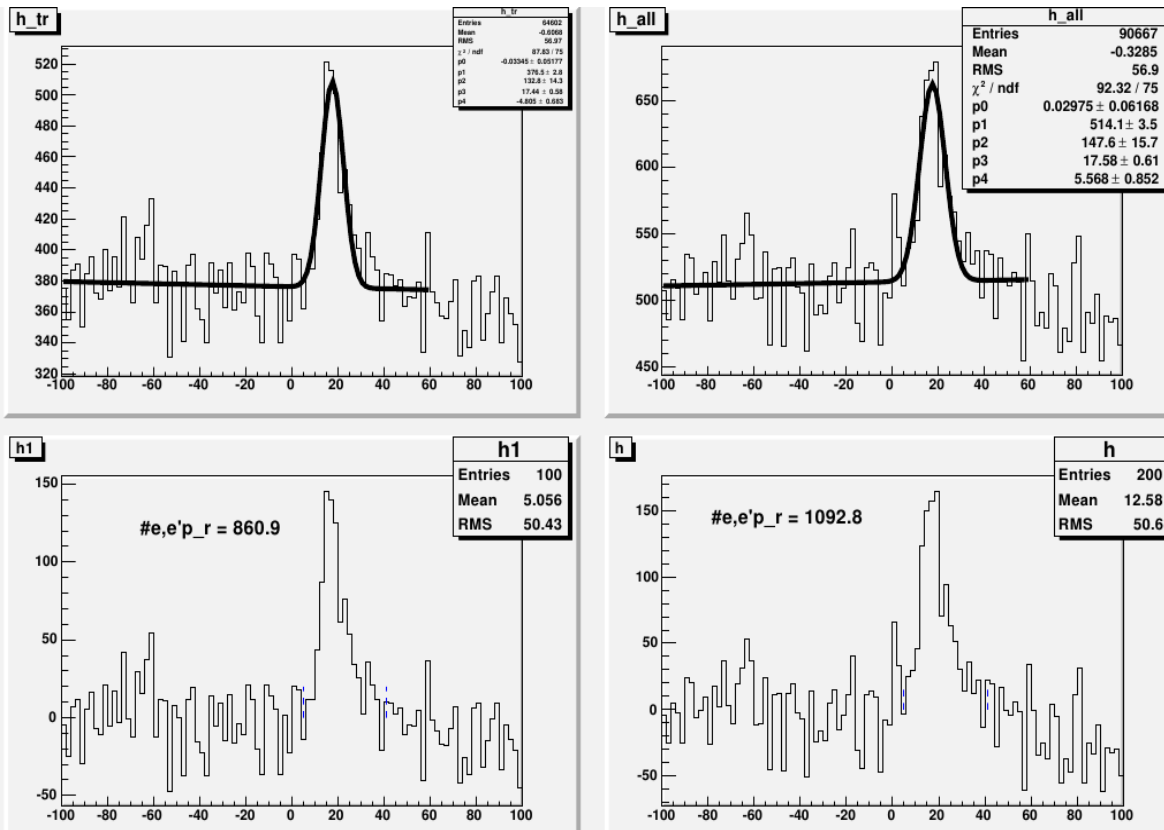


fig 3: Run number 3197. Left side (e,e'p_recoil) with tracking and the right side without. The fit is ONLY to estimate the background level and the counting of #e,e'p events is done between 7 and 40 ns.

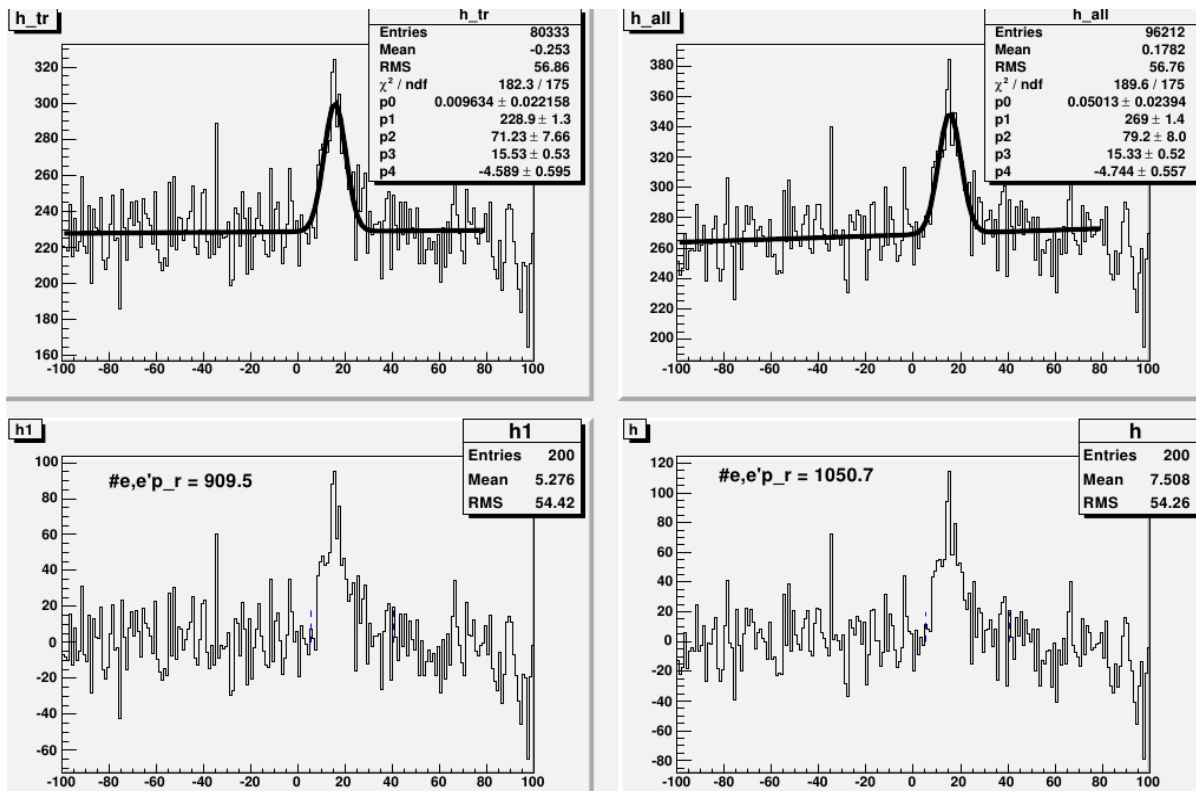


Fig 4: same as 3 for run 3198.

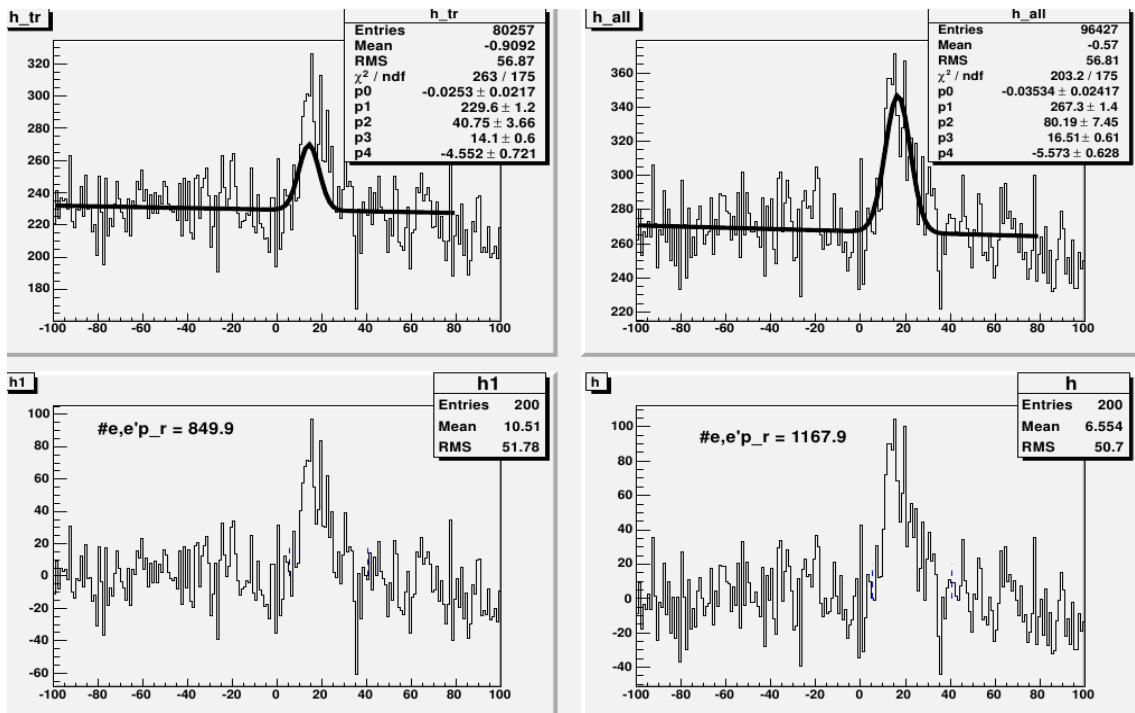


Fig 5: same as 3 for run 3222.

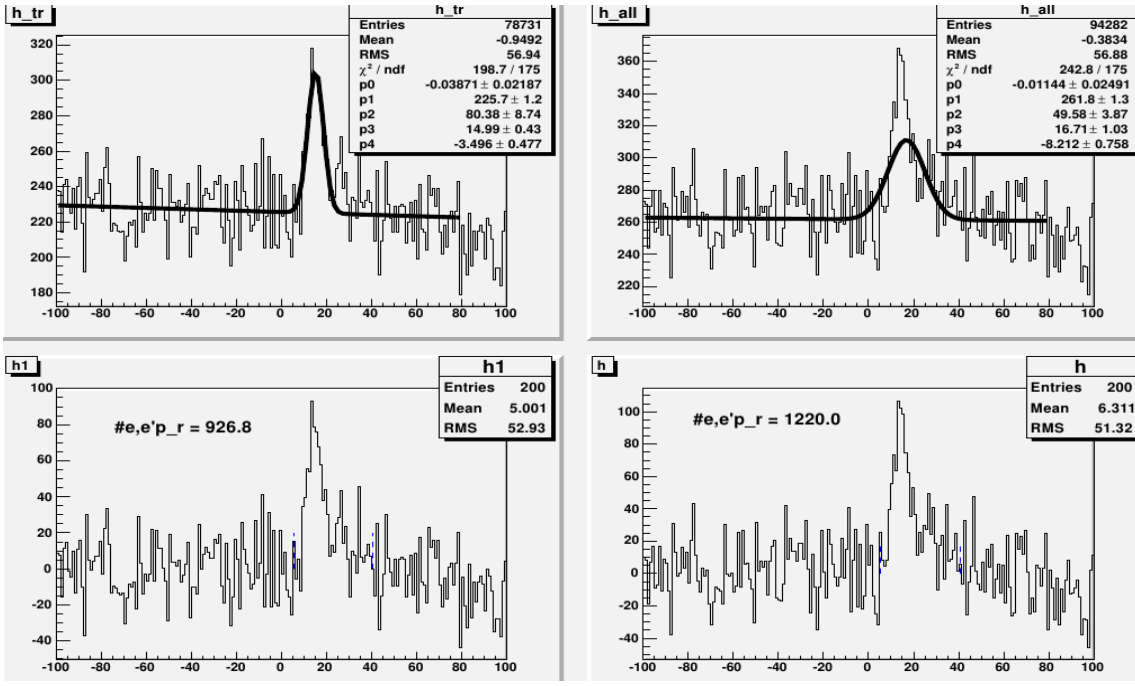


Fig 6: same as 3 for run 3223.

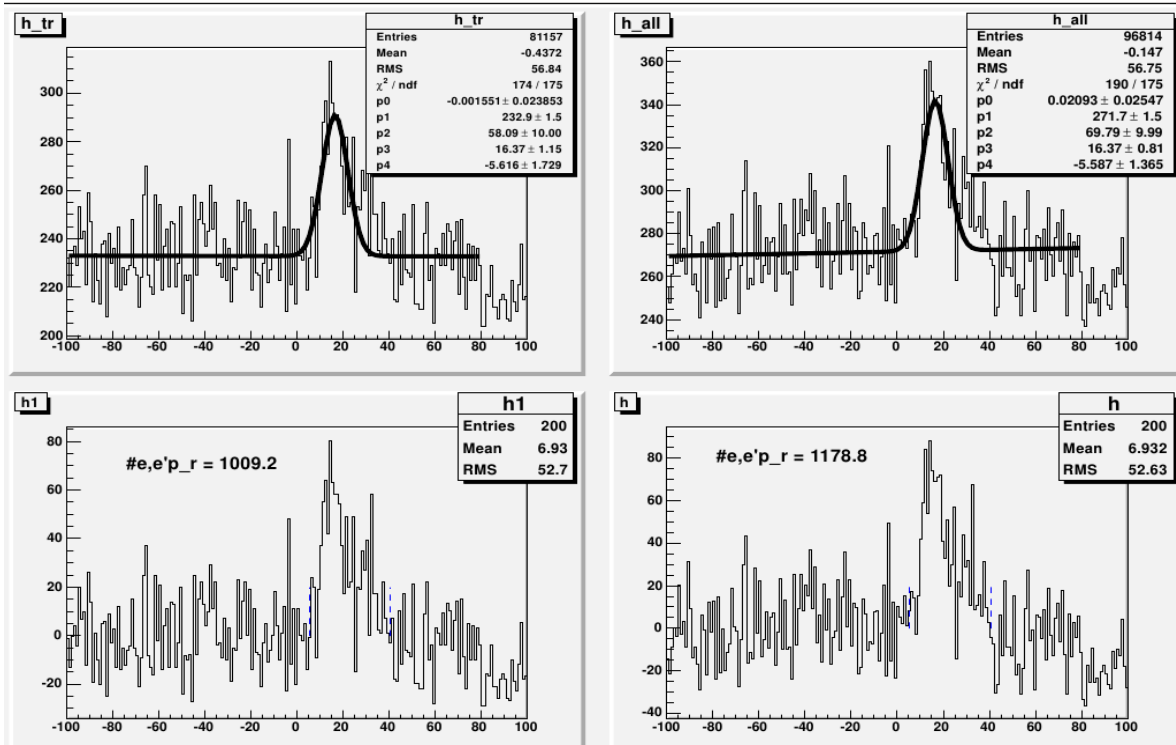


Fig 7: same as 3 for run 3245.

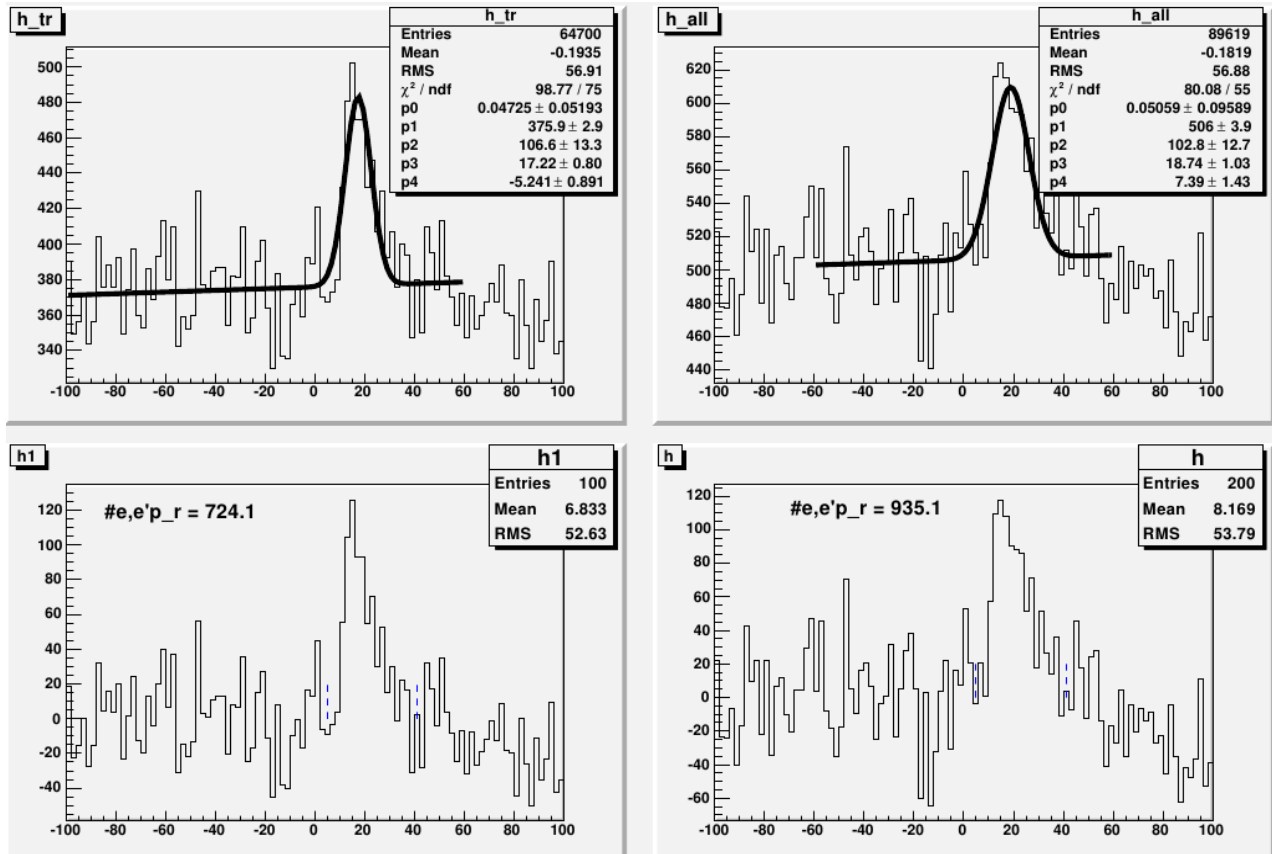


Fig 8: same as 3 for run 3246.

From these runs the efficiency that we have:

3197	$78.7\% \pm 0.1\%$
3198	$86.5\% \pm 0.1\%$
3222	$73\% \pm 0.1\%$
3223	$76\% \pm 0.1\%$
3245	$85.6\% \pm 0.1\%$
3246	$77.4\% \pm 0.1\%$

Average $\sim 79\%$ but large fluctuation.

From Miham analysis page I found that his proton detection efficiency of the MWDC in respect to scintillators is $\sim 75\%$.