

BigBite analysis 4He(e,e'pp)

TOF offset calibration:

From the elastic $ep \rightarrow ep$ measurements, proton momentum reconstruction in BB was calibrated using the left HRS. The achieved momentum resolution was $\sim 1.7\%$ at ~ 400 MeV/c. The best TOF resolution that we succeed to extract in this case was ~ 0.55 ns.

Between the elastic runs and the production period number of changes were done:

- 1) Trigger configuration was changed
- 2) modification in the Re-Timing circuit.
- 3) Adding delay cables to dE/E planes

Following these changes, new calibration must be done.

The process that I used to calibrate TOF offsets was (e,e'p_recoil). I looked on backward protons with respect to LHRS.

The achieved resolution is shown in fig 1:

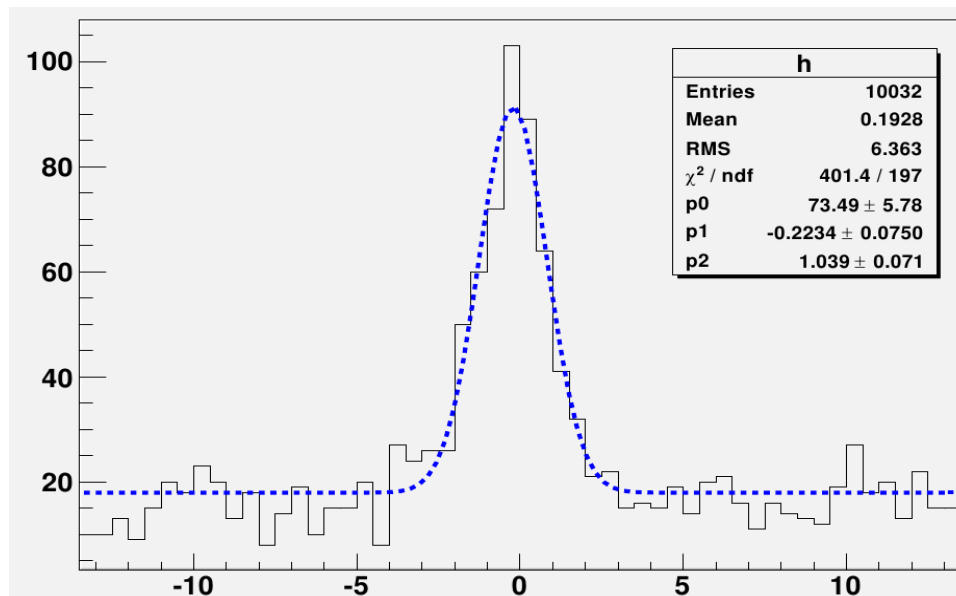


Fig 1: Corrected TOF in [ns] for all bars in E plane.

The resolution of the single bar can be as low as ~ 0.7 [ns].

Additional calibration can be done to achieve a better alignment.

Momentum based on WireChambers and momentum based on TOF can be compared, fig 2:

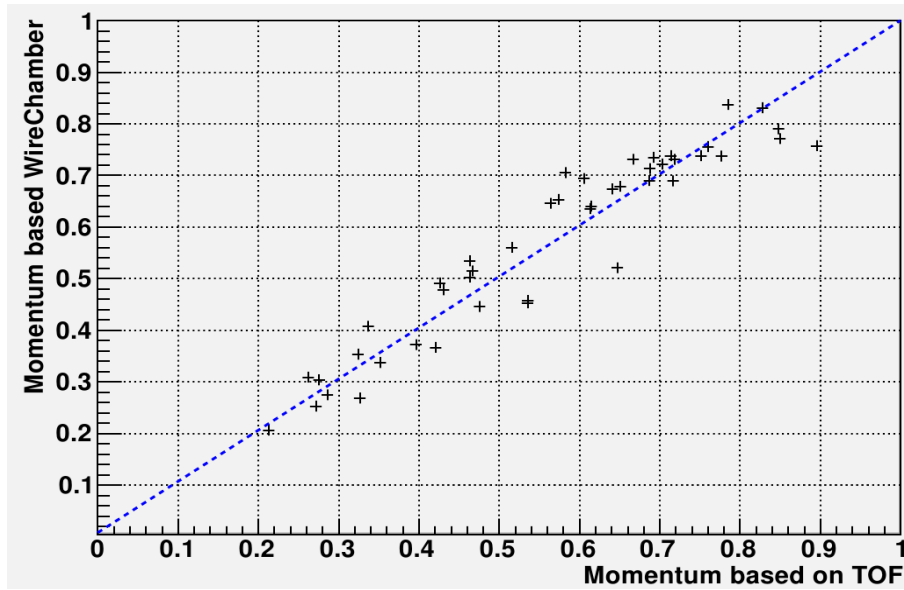


fig 2: momentum [GeV/c]

(e,e'pp)

Looking on the triple coincidence for 750 MeV/c kinematics the resulting TOF peak is presented in fig 3:

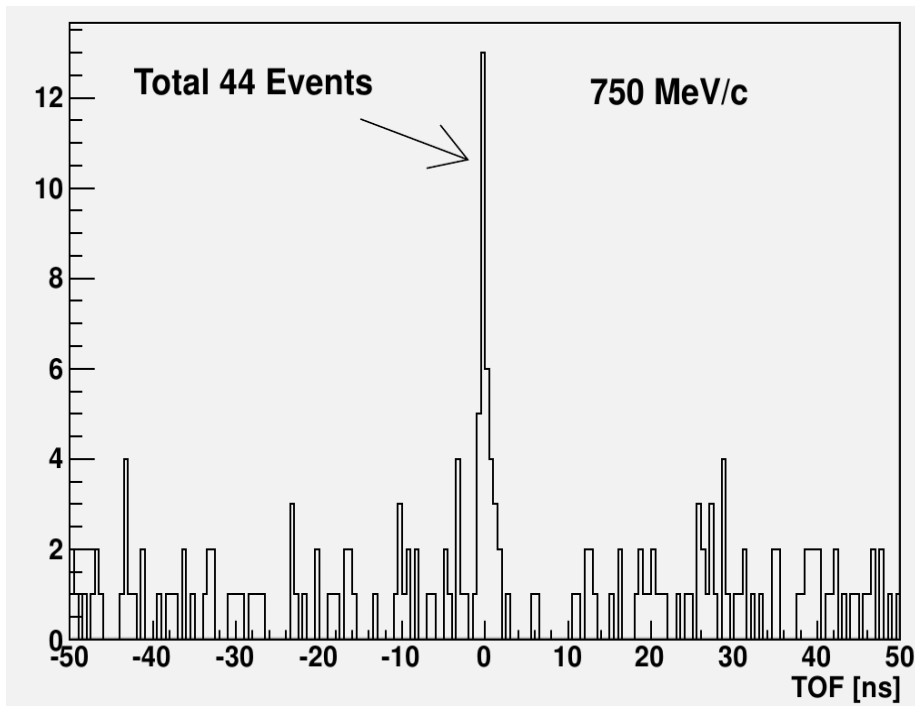


Fig 3: Triple (e,e'pp) corrected TOF spectrum for 750 MeV/c

angular correlation between Pmiss and P recoil, fig 4. Very preliminary!

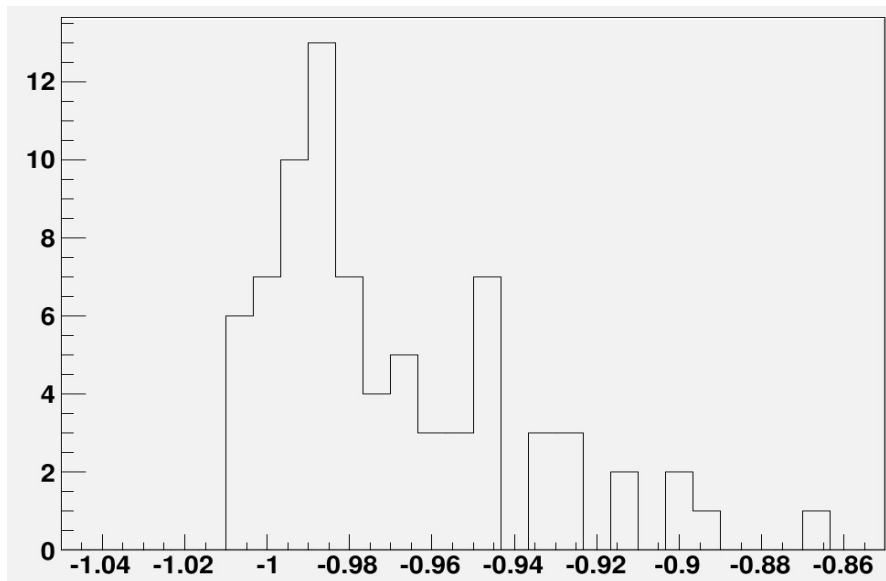


fig 4: Angular correlation