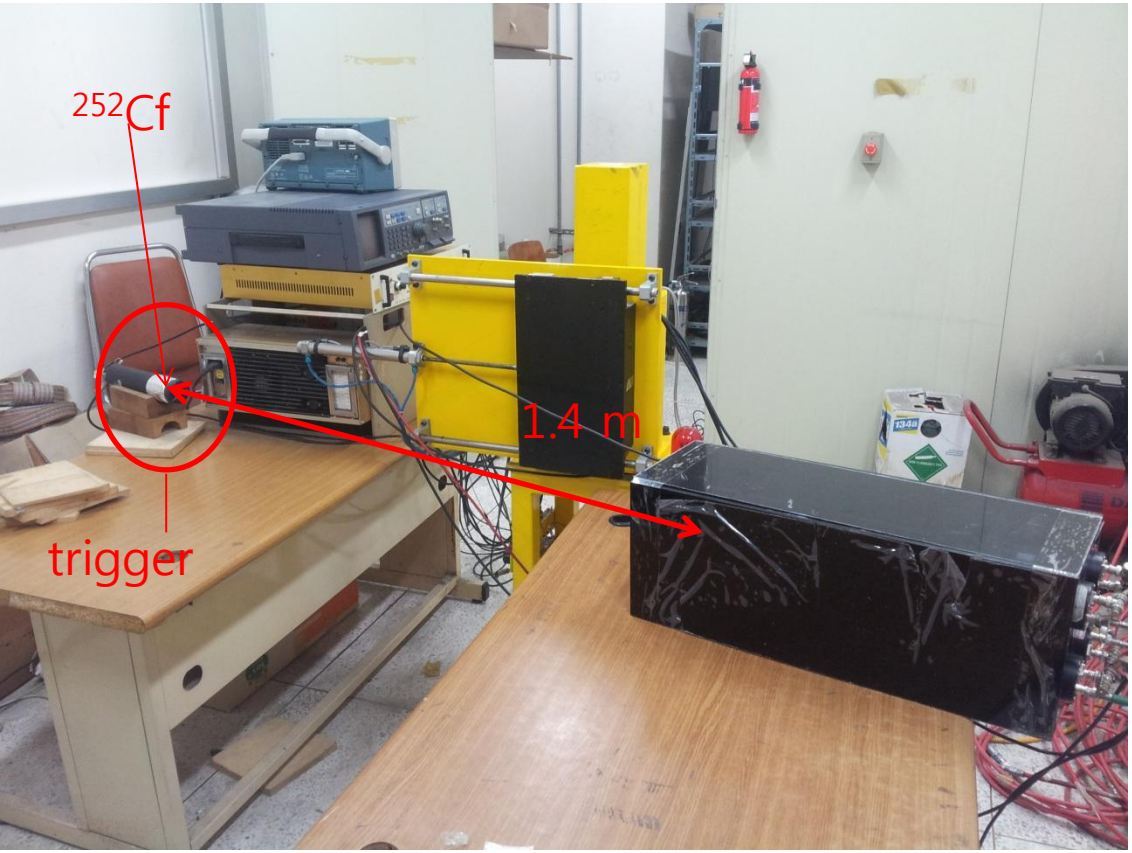
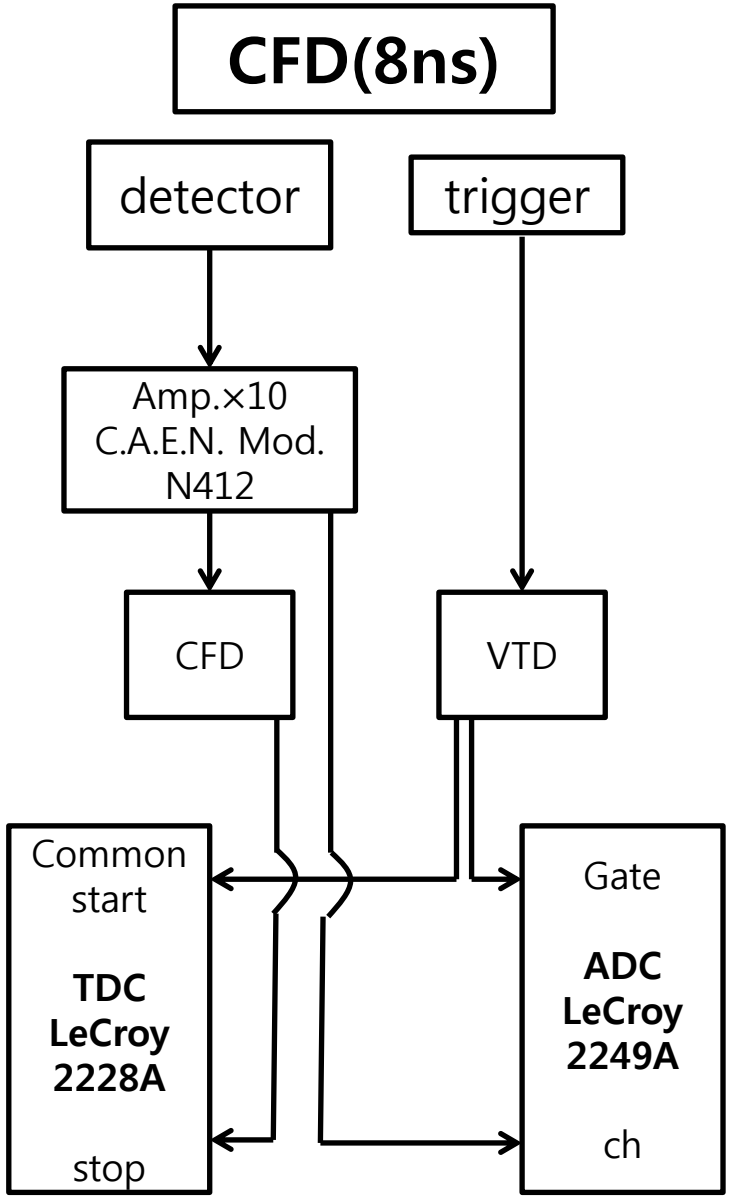
2013_6_20_labmeeting

KiSoo Lee

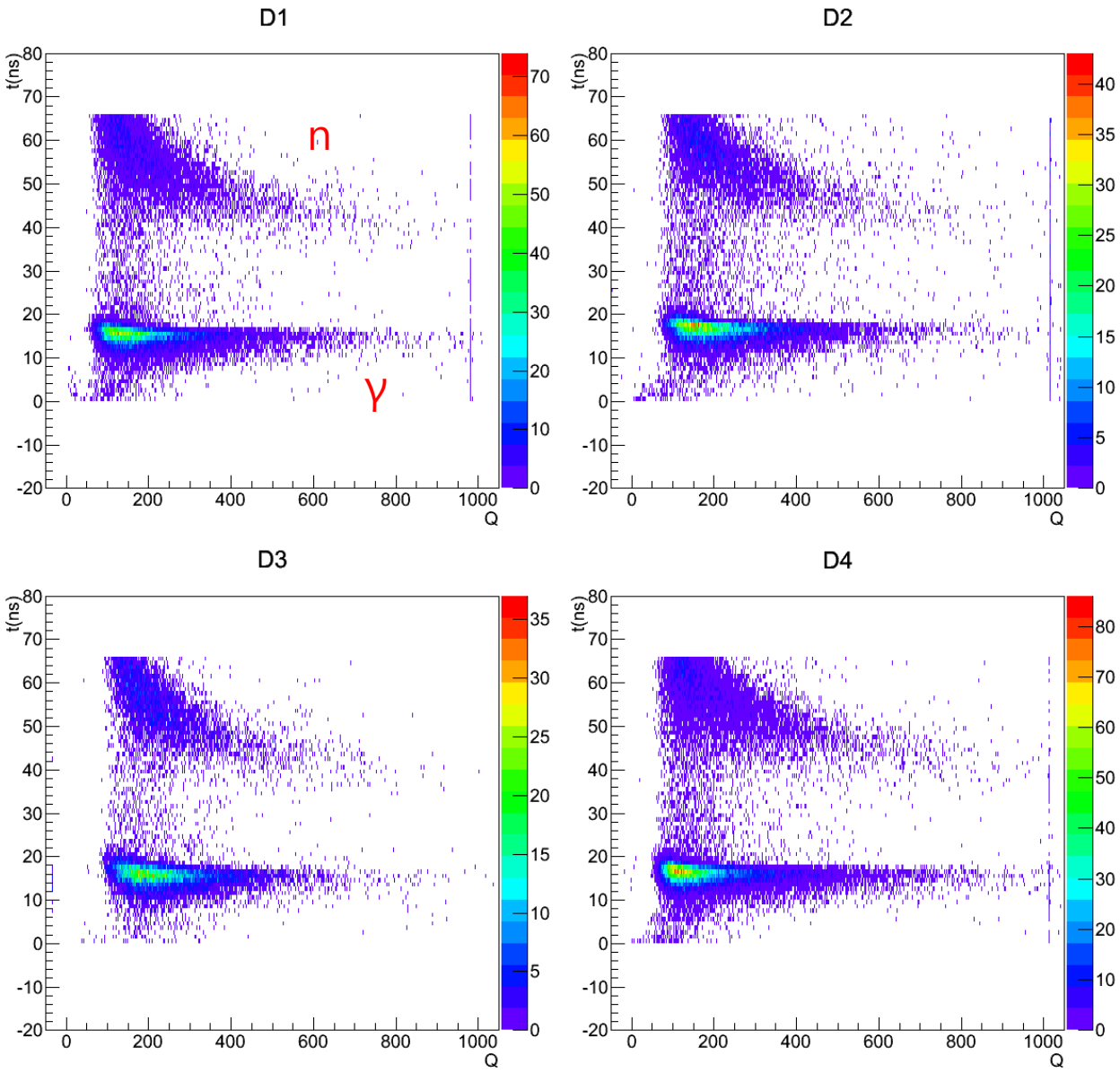
^{252}Cf experiment





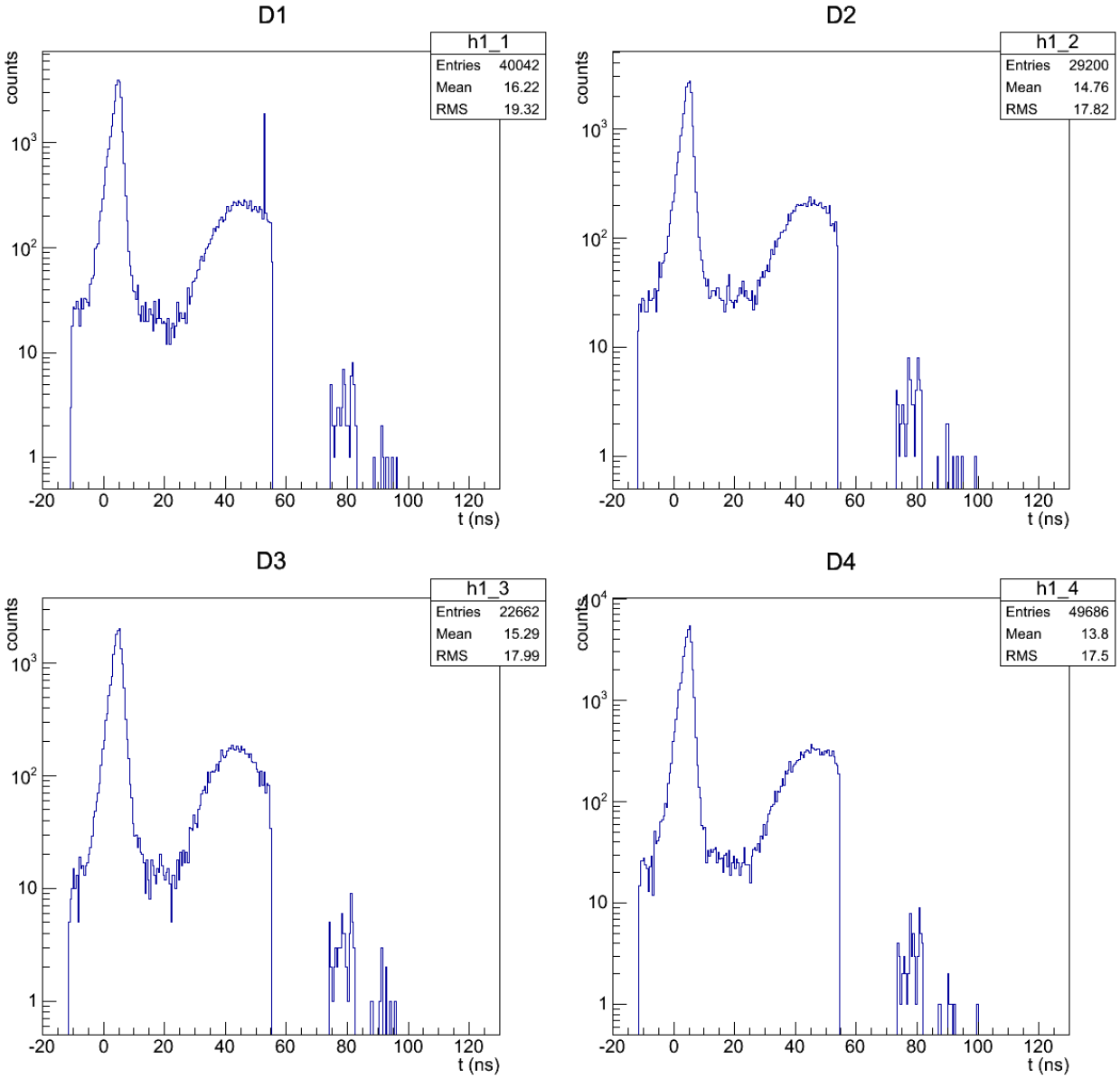
Charge vs. time

- Neutron data is cut by TDC



Time distribution

- TDC can not collect low energy neutron



TDC LeCroy 2228A

Resolution (ps)	50	100	250
Time range (ns)	100	200	500

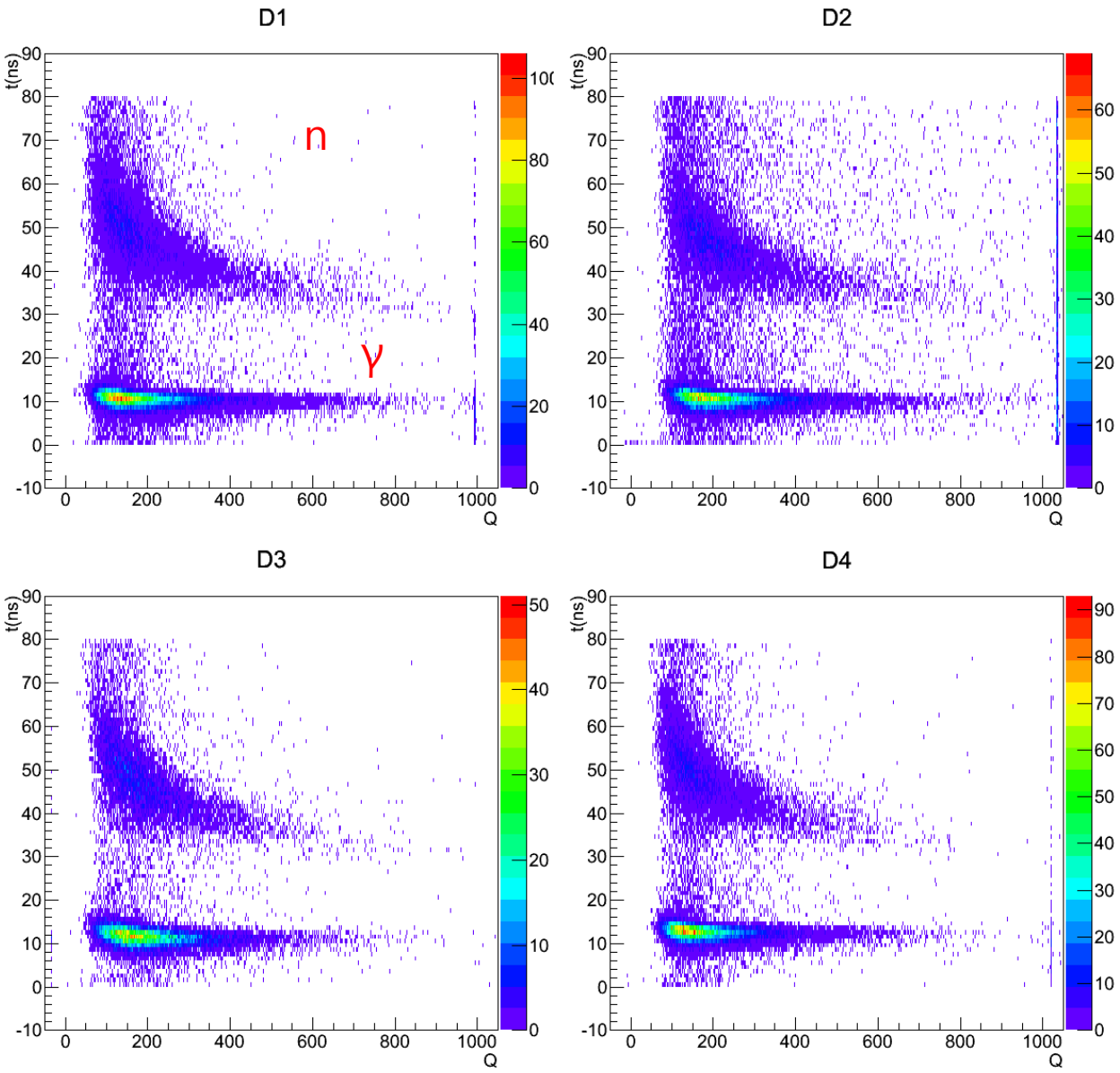
Resolution means time for one channel in TDC
Now resolution is 40.7 ps
But TDC can read about 66 ns
To reconstruct low energy there are two ways
1. Enlarge time range
-demerits: poor resolution
2. Shorten distance between source and detector
-demerits: large depth of interaction error. Short time interval between gamma and neutron

Timing adjustment

- Change source distance to 1.2 m

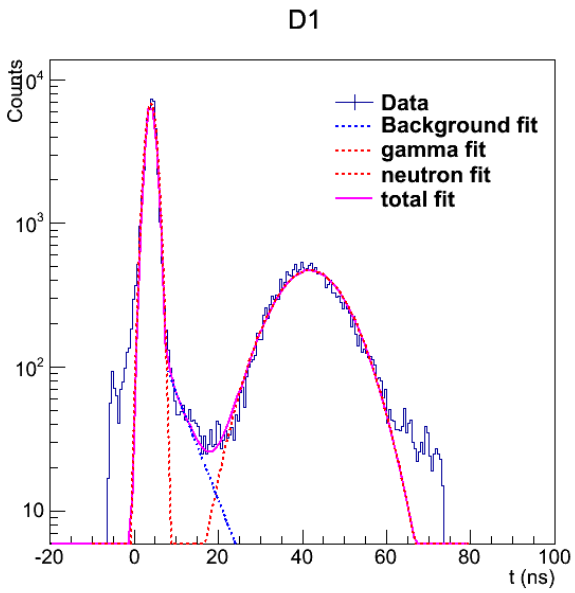
Charge vs. time

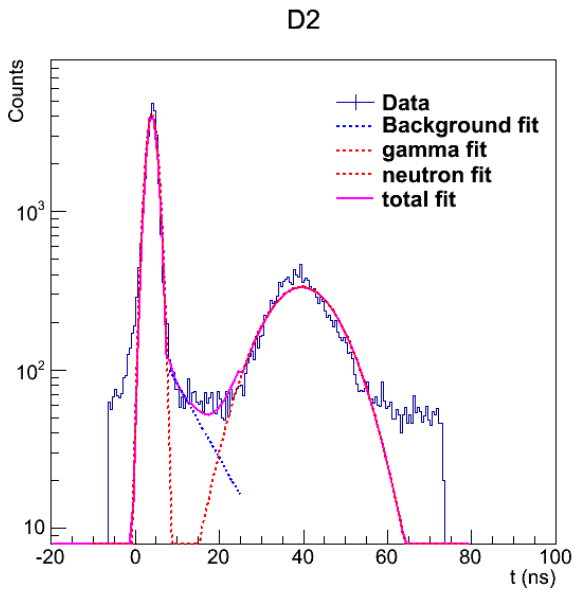
- Almost neutron data achieved
- Data time limit is increased
- 66→80 ns

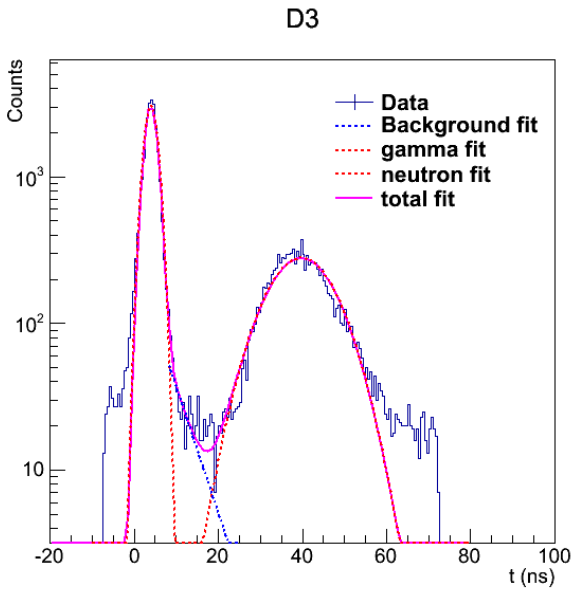


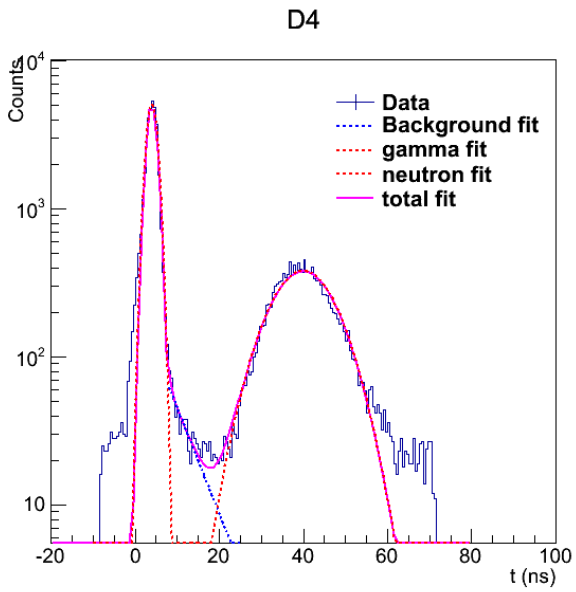
Time distribution

- Low energy neutrons are well collected









Neutron energy

- Well reconstructed about 4 MeV
- But its not enough