# Prototype Block Detector for low energy neutron measurement

**Lab Meeting**

**2013/08/16**

**Friday**

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# Test at KIRAMS




*Fig.1: Korea Institute of Radiological & Medical Sciences –KIRAMS (1st & 2nd panels)*

# Third test of the prototype block detector for low energy neutrons at KIRAMS [New light guides]

# Electronics setup

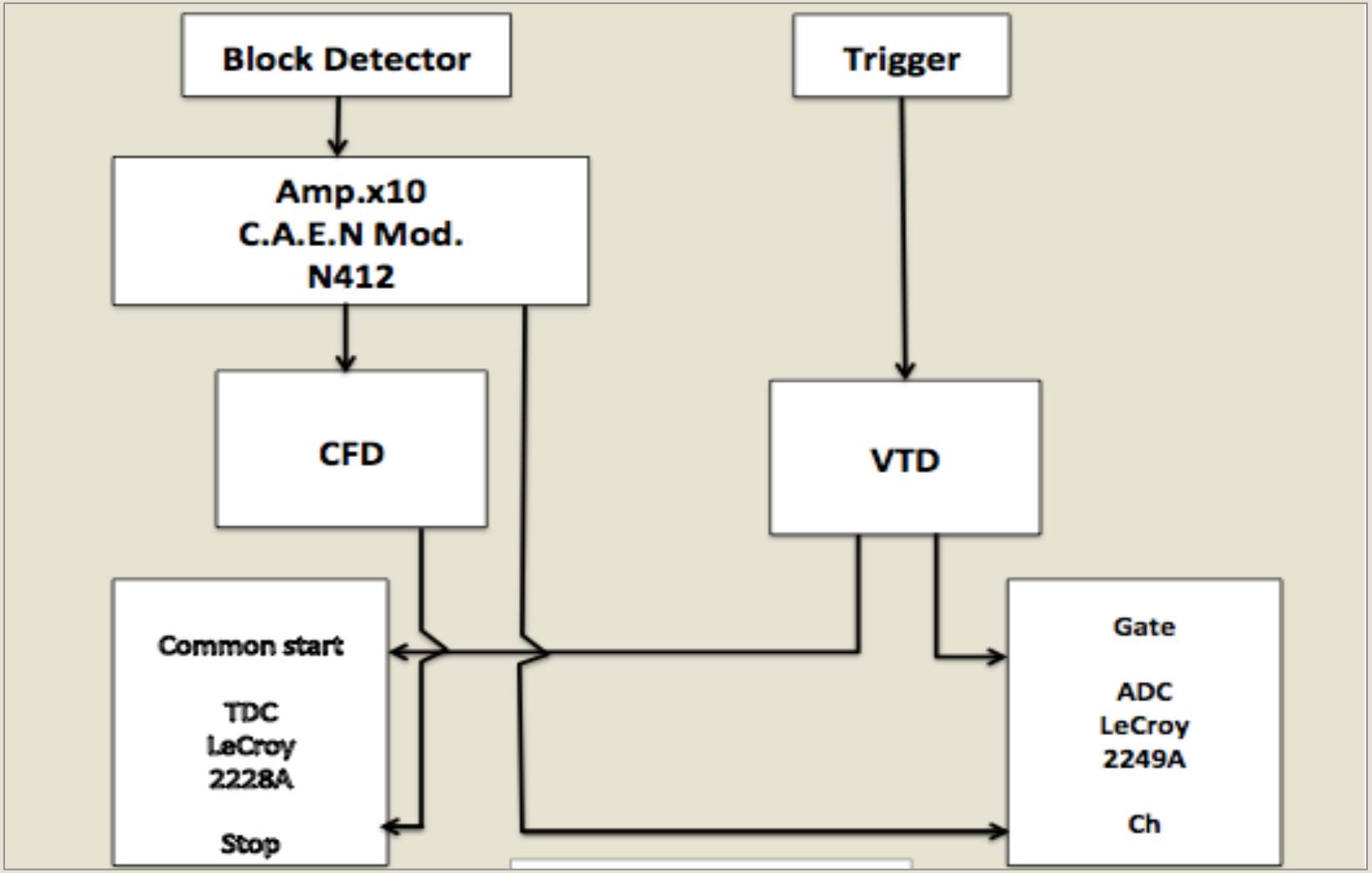



*Fig.2: Electronics set-up for data collection*

# Experimental setup

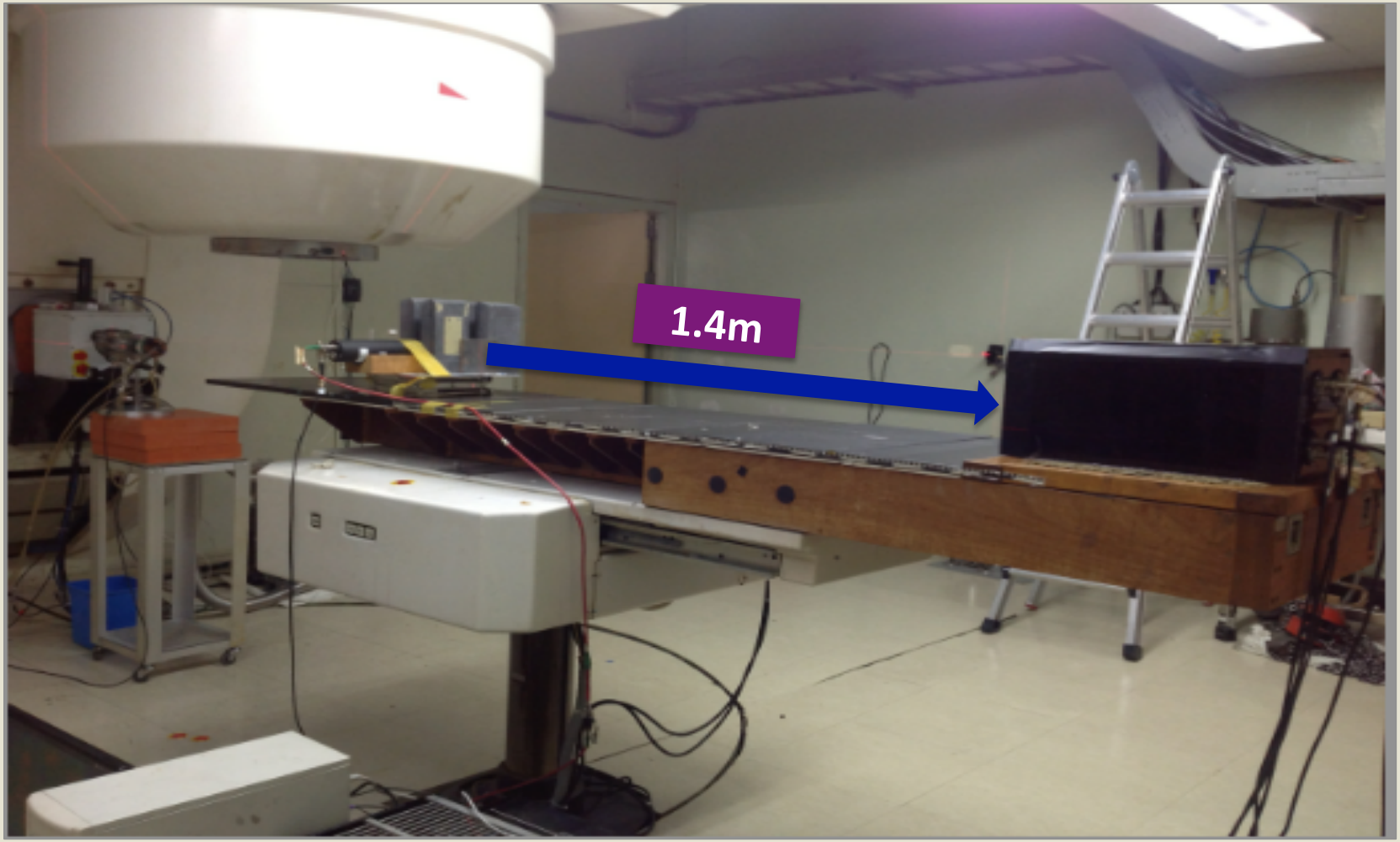



*Fig.3: Experimental set-up for data collection at KIRAMS-Seoul, South Korea*

# Test results with proton beam on an iron target (neutrons)…

- Pedestal data results

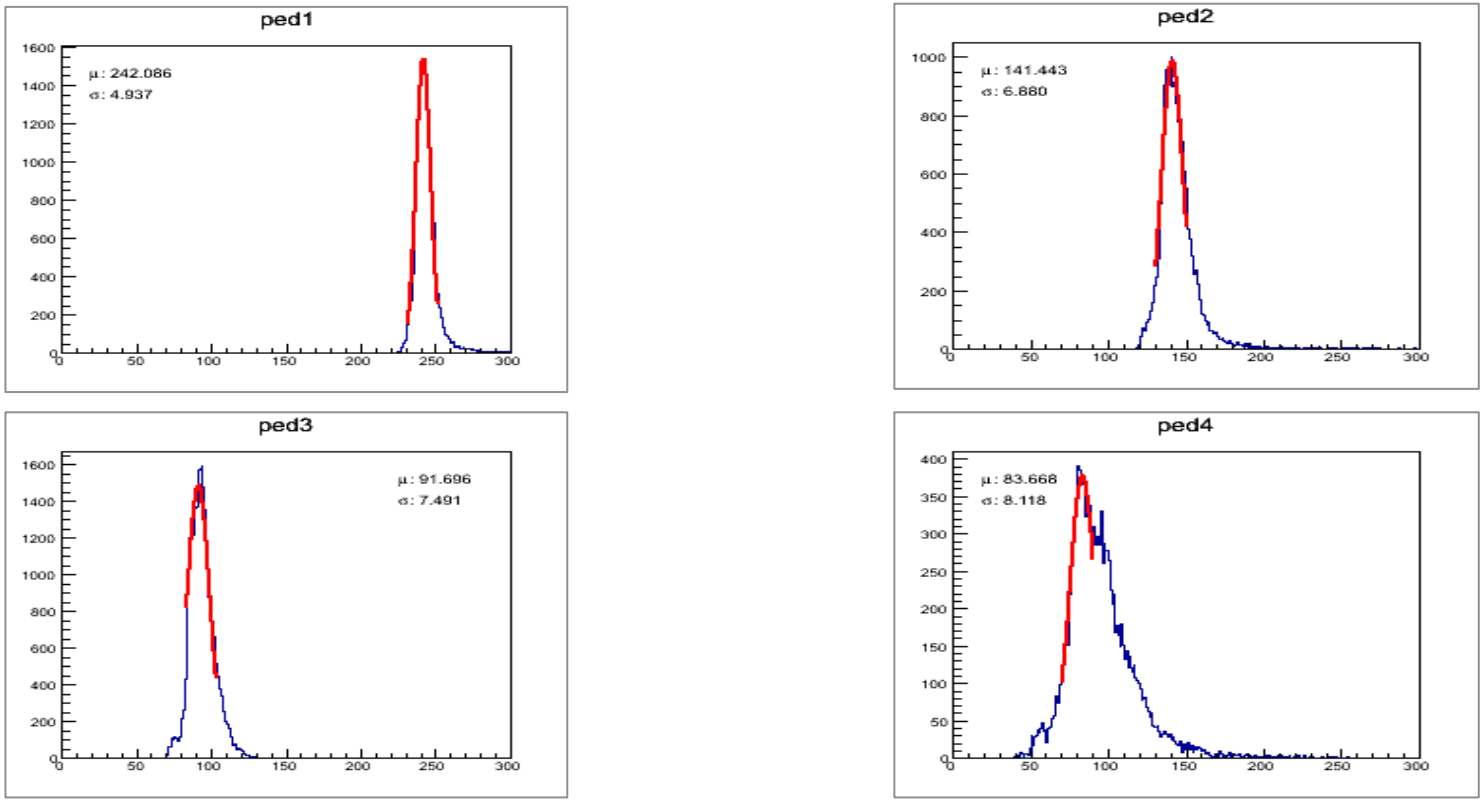



*Fig.4: Pedestal data results for detectors 1, 2 , 3 & 4 respectively.*

# Test results with proton beam on an iron target (neutrons)….

- Zero base time of gammas

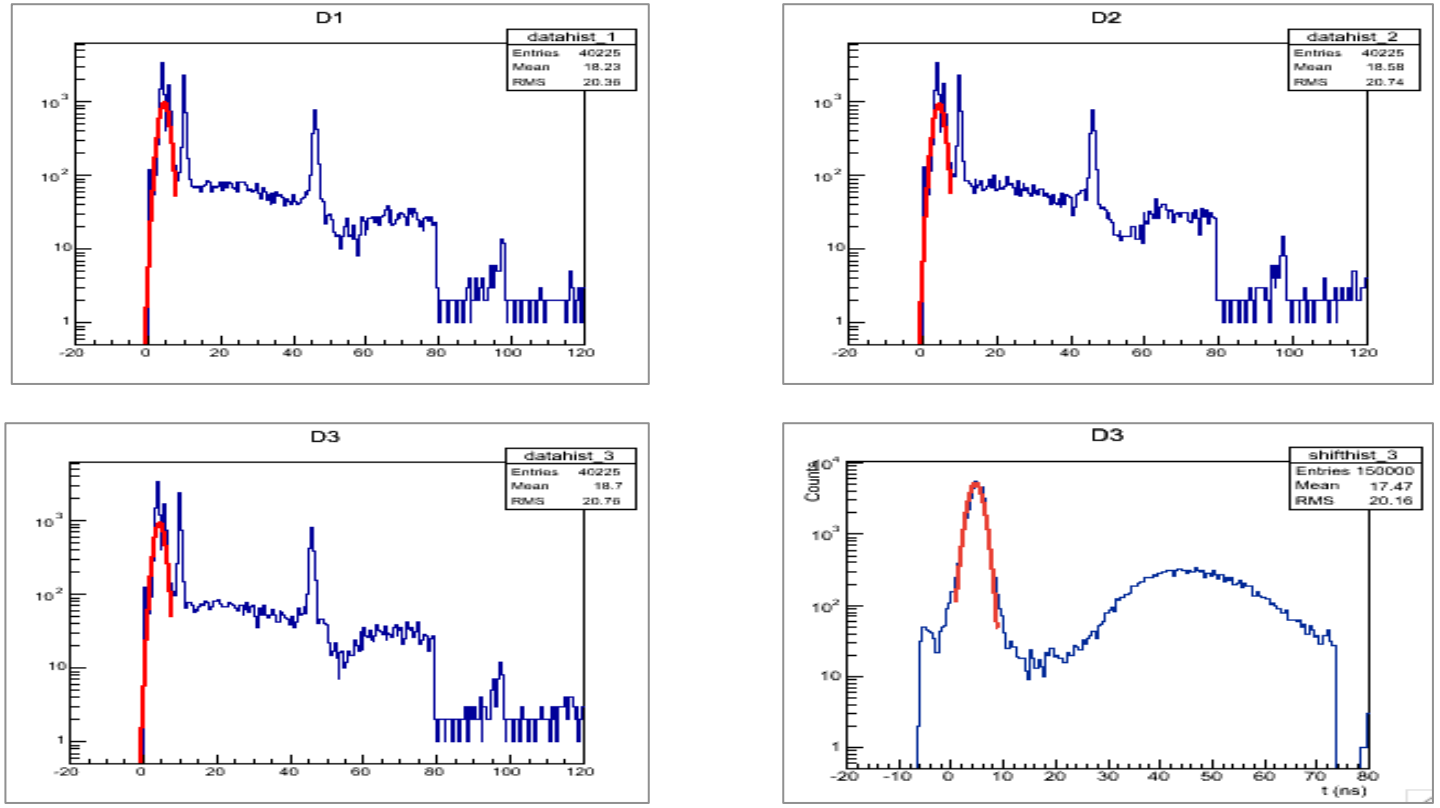
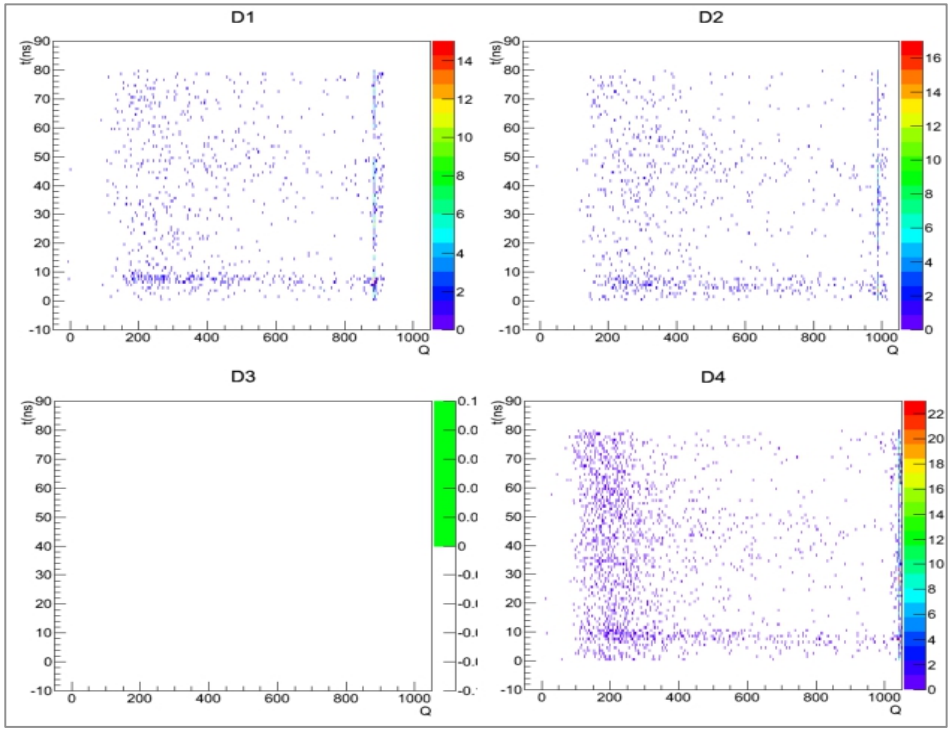



*Fig.5: Time of flight distributions of gammas & neutrons for detectors 1, 2 & 3 respectively. 4th panel (D3) shows ToF distribution reference from $^{252}Cf$ source .*

# Test results with proton beam on an iron target (neutrons)….

- Reason for the unclearly defined ToF distributions for gammas and neutrons.(insufficient data collection)



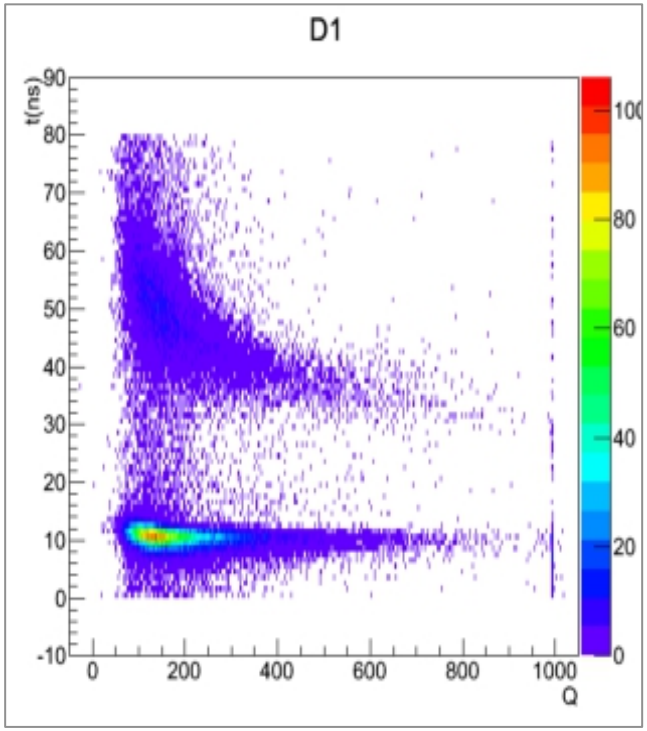




*Fig.6: KiSoo's result depicting the charge distribution of a plot of TDC vs ADC for detectors 1, 2, 3 & 4 with the RHS panel being used as a reference.*

# Test results with proton beam on an iron target (neutrons)

- Fitted data for the ToF distributions(closest fit performed so far).

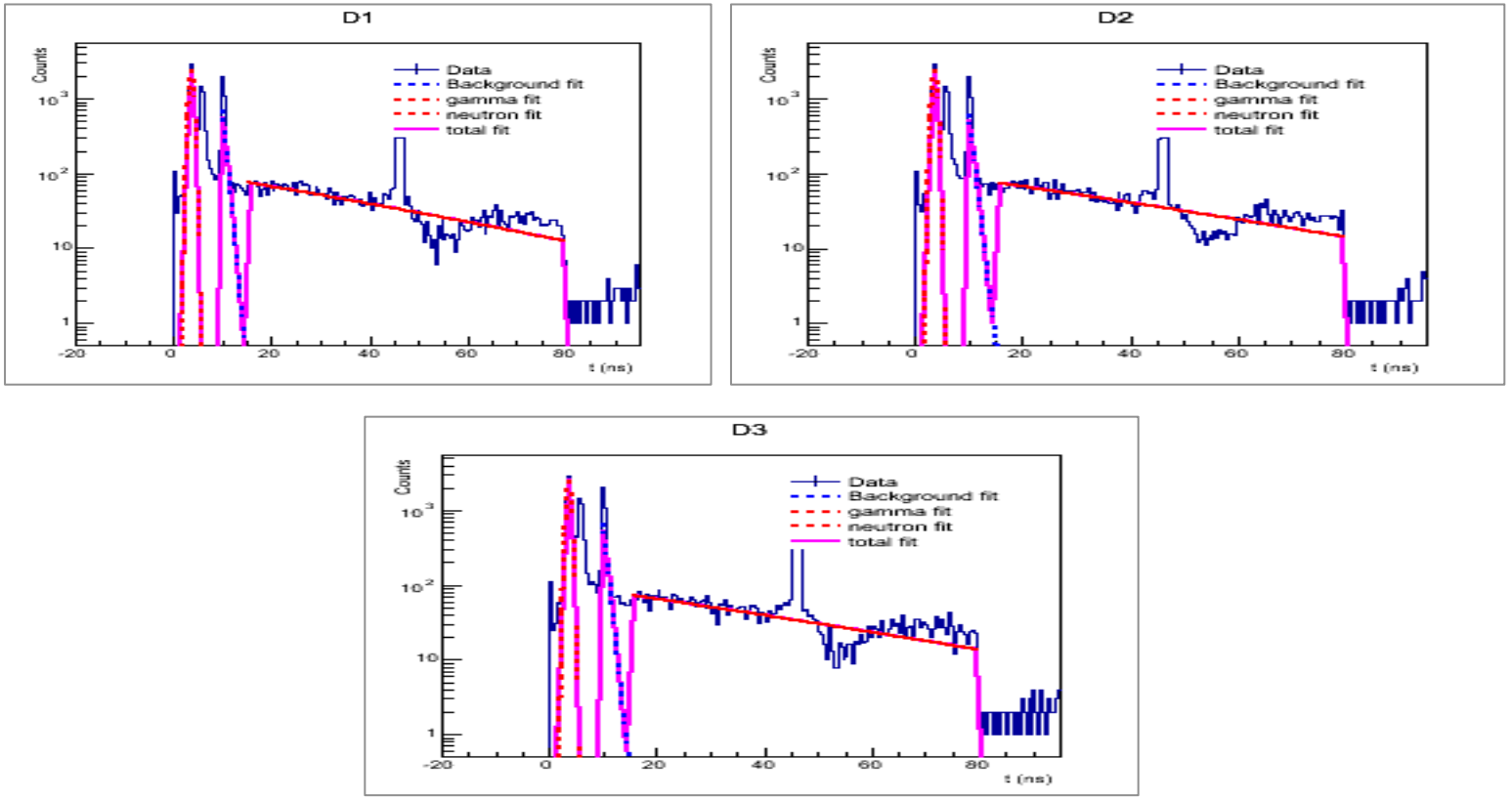



*Fig.7: Roughly fitted data results for the ToF distributions of gammas & neutrons*

# Future tasks

- Re-do the fit for the ToF distributions to get a better fit if possible.
- Plot of the final neutron energy
- Others…..