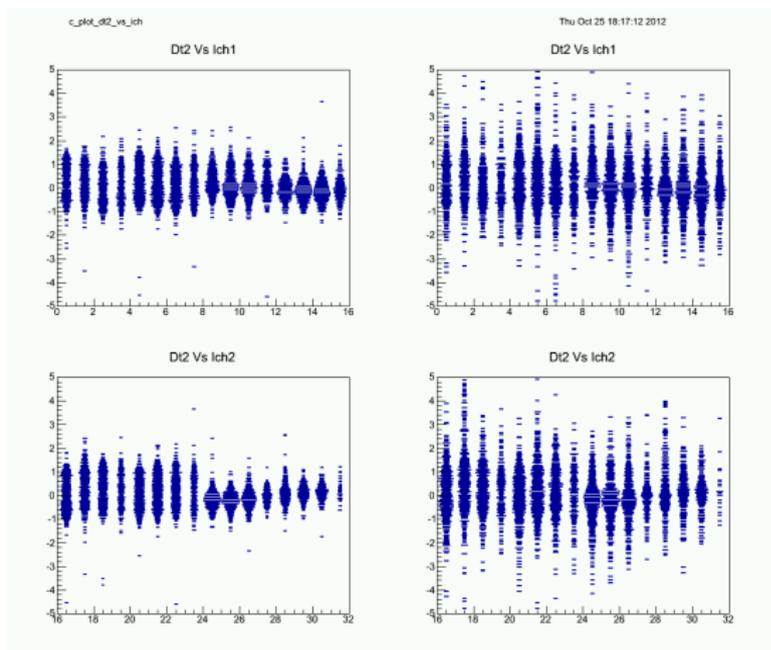


CAEN 1742 Studies

P. Murat

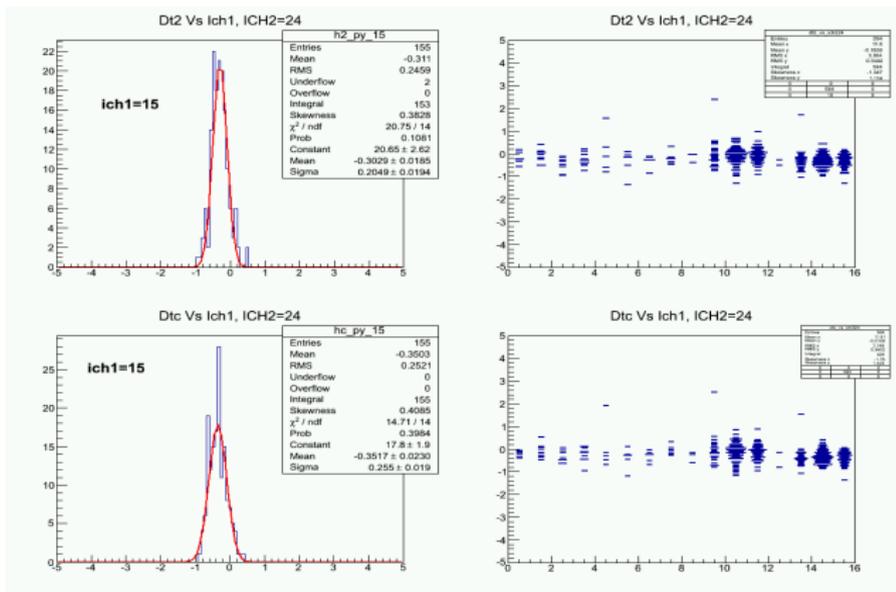
November 7, 2012

Coincidence time resolution vs the channel number



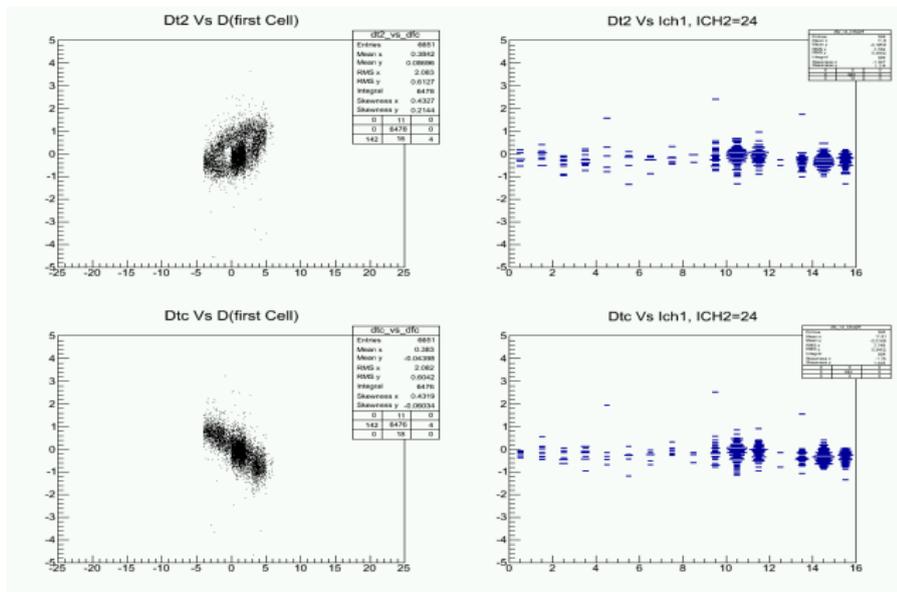
- 4x4 LYSO arrays read out by 2 4x4 Hamamatsu 11064 MPPC matrices (32 channels)
- use CAEN 1742, with 4 DRS4 chips on board
- DT2: $\Delta T = T_1 - T_2$, the difference in the measured photon arrival times

Look at one channel (#24)



- The first cell number is determined by the trigger arrival time and DRS4
- expect $T_{corr} = T - T_{trig}$ not to depend on the first cell number
- $\Delta TC = \Delta T_{corrected} = (T_1 - T_1^{trig}) - (T_2 - T_2^{trig})$
- correction for the trigger time doesn't improve the timing resolution - why?

The first cell issue



- weird dependence of the ΔT on the Δ_{first_cell}
- contrary to the expectation, ΔT^{corr} shows linear dependence on the Δ_{first_cell}
- can try to correct the Δ_{first_cell} dependence, but this correction should not be necessary