



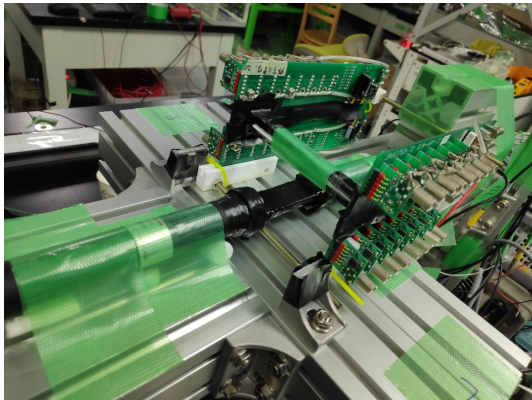
고려대학교
KOREA UNIVERSITY



BH2 Report

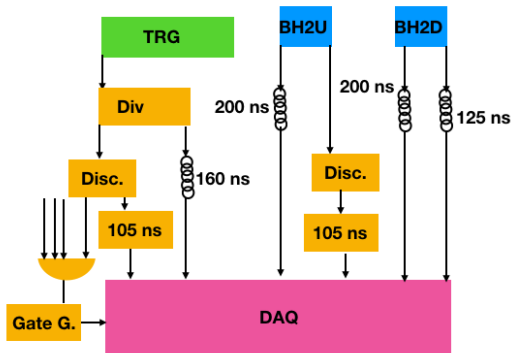
July 29, 2019

New BH2 Setup



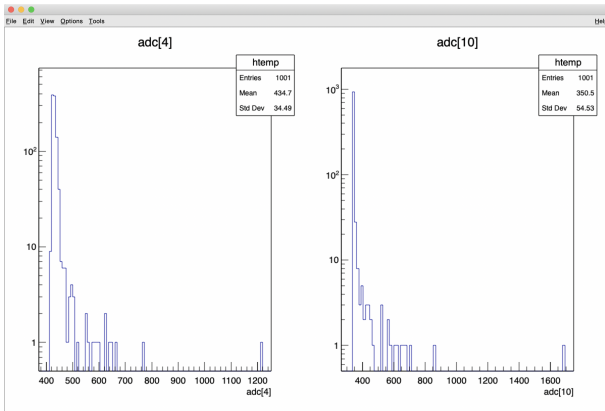
- 2 BH2 Prototypes are fixed.
- Event rate is

Delay Box Cosmic Test Setup



- Cosmic test were done to see the effect of delay.
- Baseline were set to 0.
- 125 ns is BNC cable, others are Delay box.

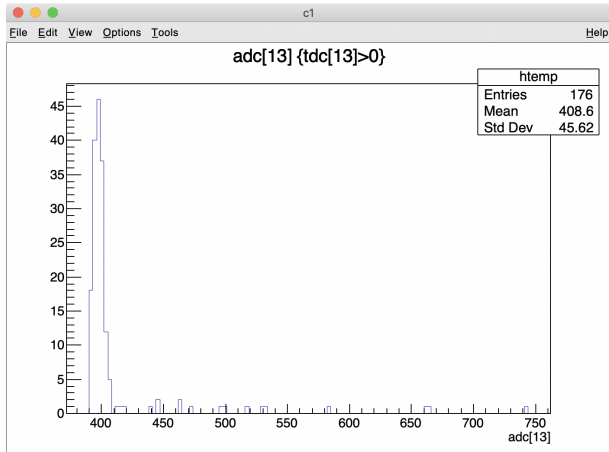
Result(200 ns VS 125 ns)



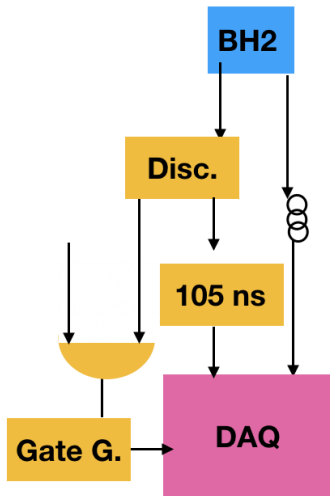
- TDC were not taken for this segment.
- Low ADC was not due to the Delay box.

Figure: 200 ns(Left) vs 125 ns(Right)

Result(BH2U, with TDC cut.)

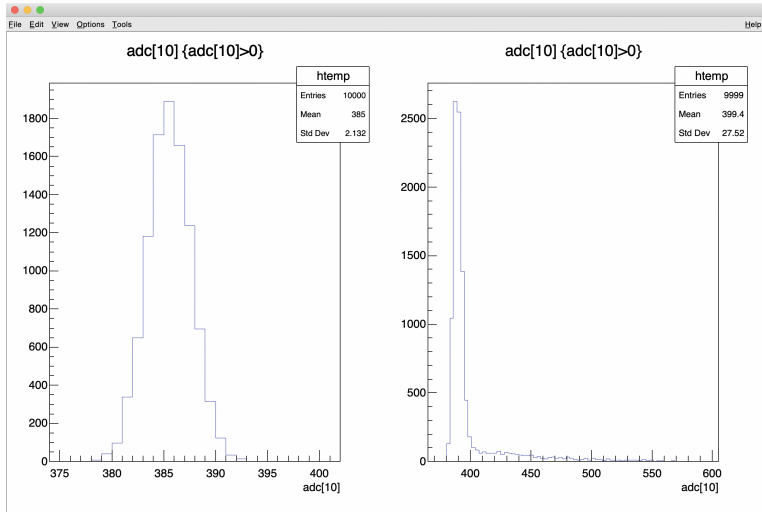


Sr90 test Setup

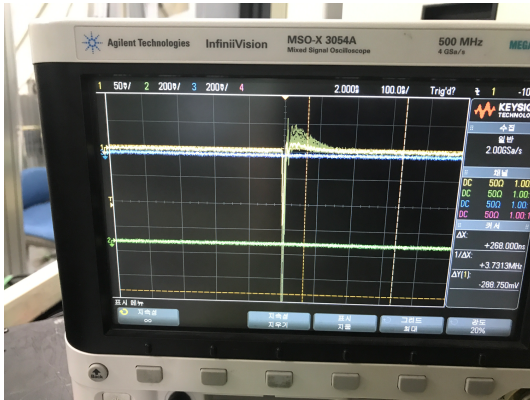


Dim.	$5^t 20^w 80^l$	$5^t 9^w 100^l$
Gain	1.3 V	1 V

ADC Spectra(Sr90)

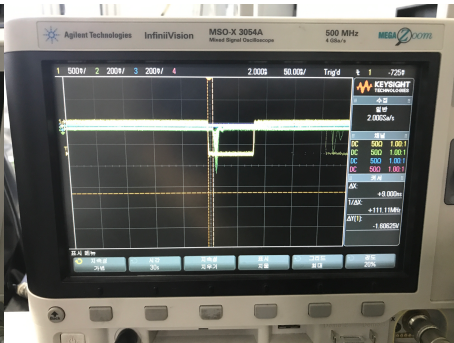
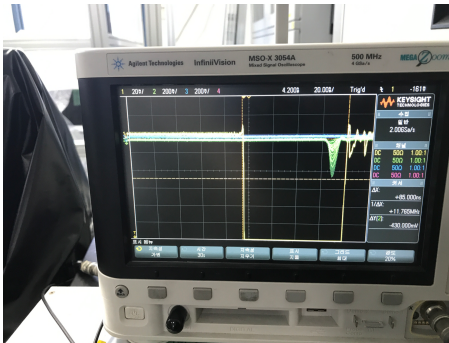


Strong Overshoot



- Strong overshoots are included in the gate.
- Overshoots were in the gate, for previous test.

Overshoot Cut vs no Cut



Overshoot Cut vs no Cut

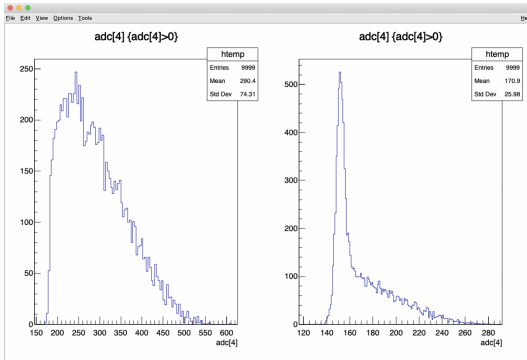
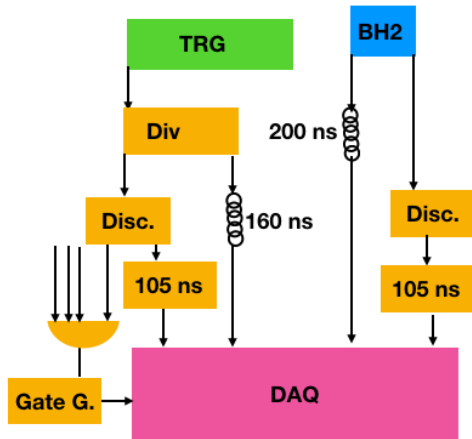


Figure: Pedestal: 159 adc

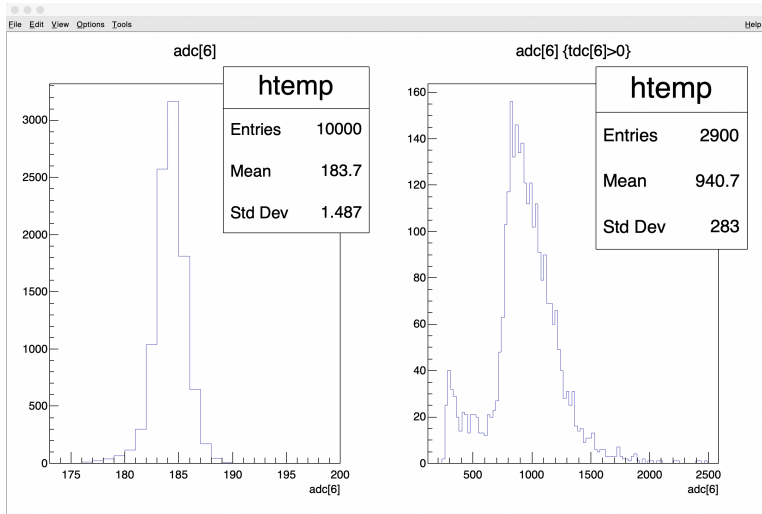
- Sr90 Spectra can be seen if the gate cuts overshoot.
- Gate Width: 85 ns.

Cosmic Setup Diagram

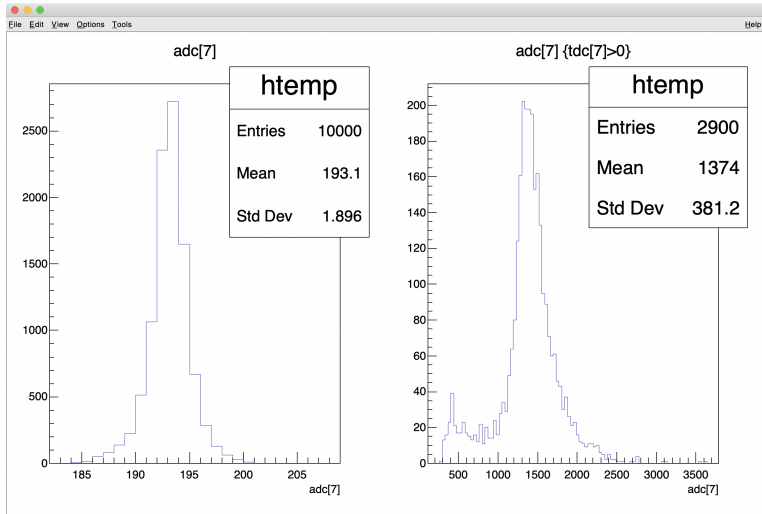


- All Triggers are connected to same Discriminator module.
- Gate Width is 140 ns.(Previous: 300 ns.)

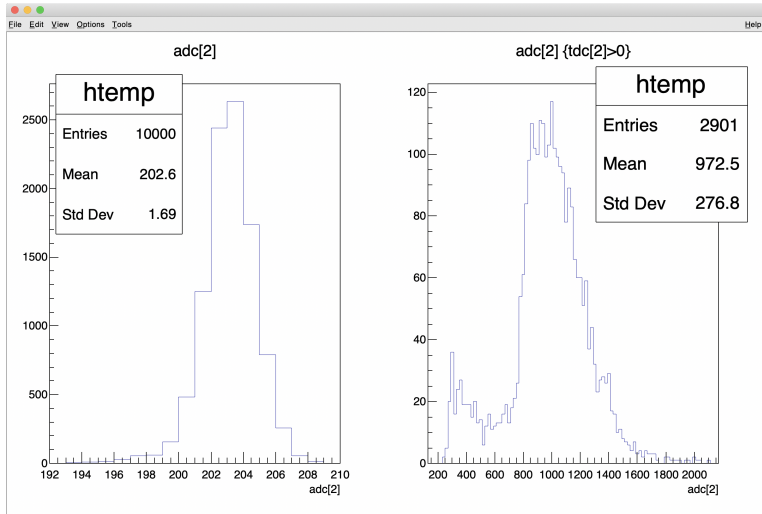
Trg0 Pedestal& ADC



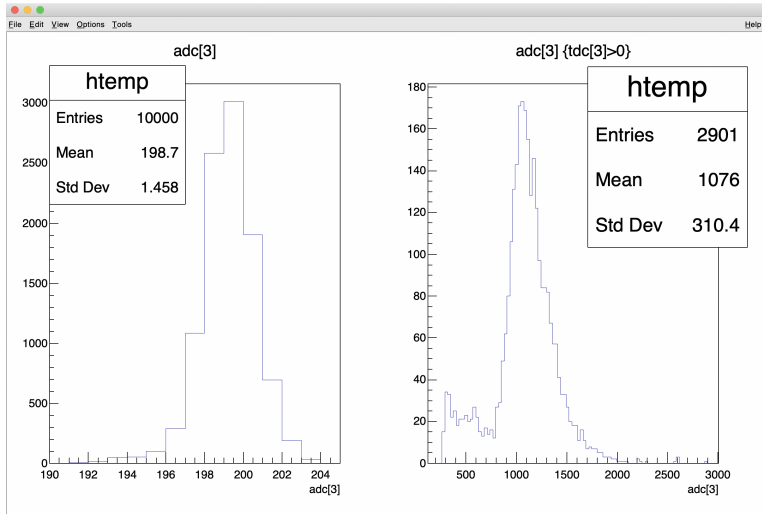
Trg1 Pedestal& ADC



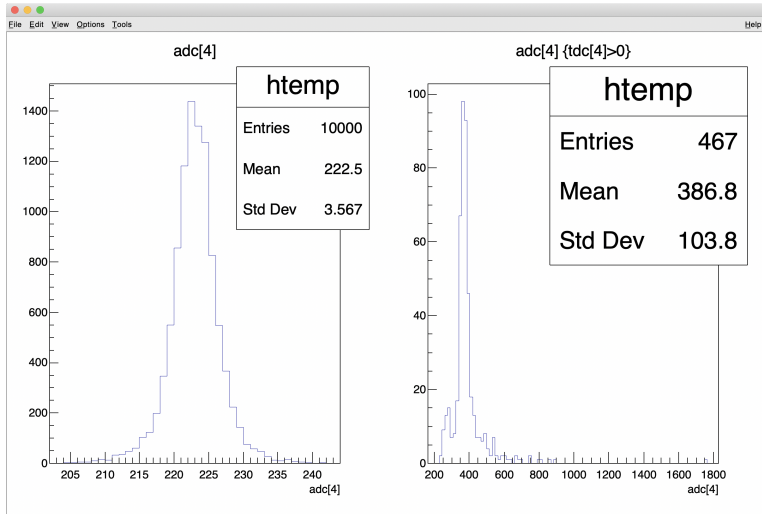
Trg2 Pedestal& ADC



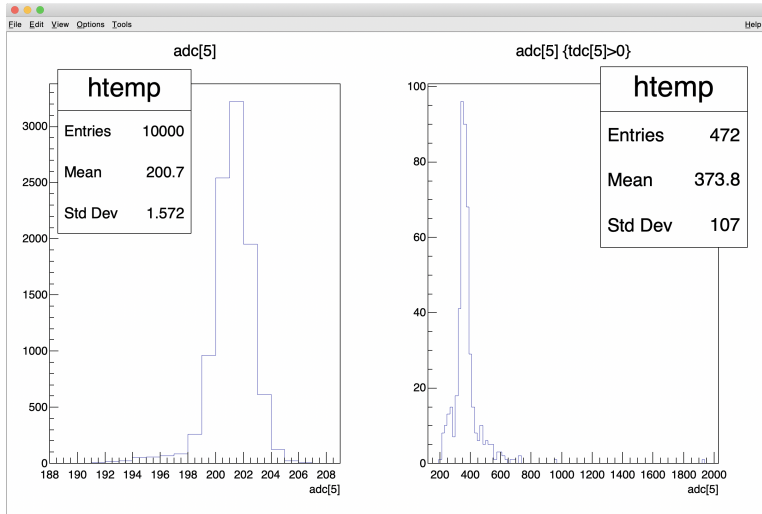
Trg3 Pedestal& ADC



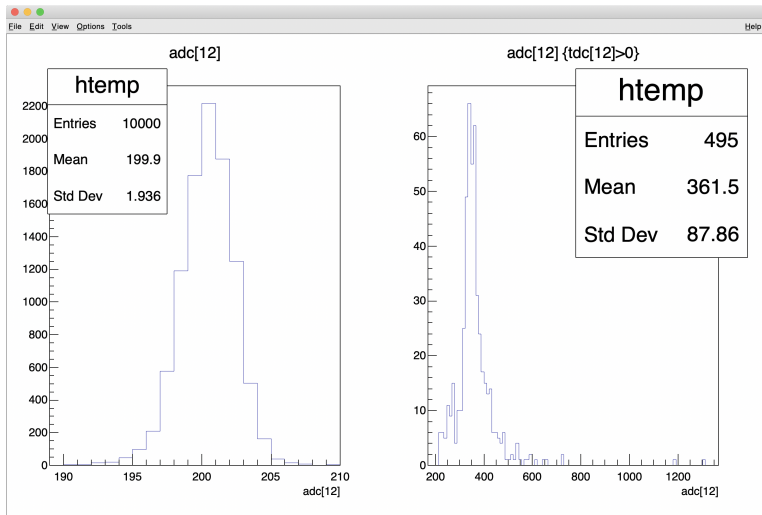
BH2 DL Pedestal& ADC



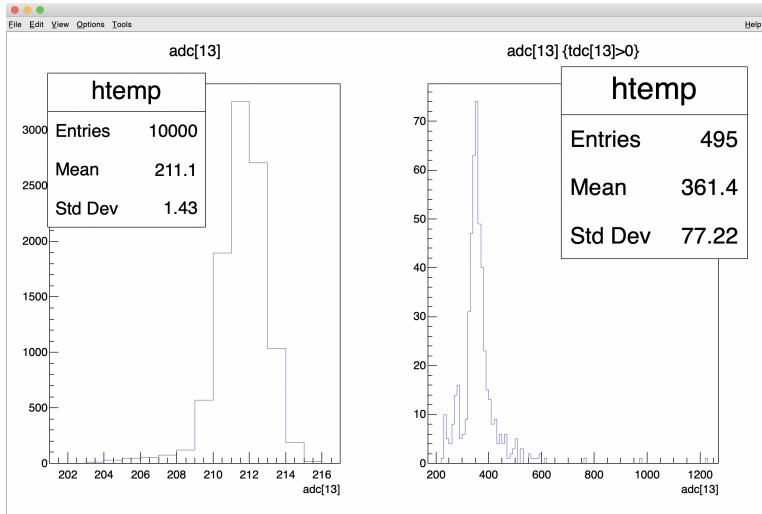
BH2 DR Pedestal& ADC



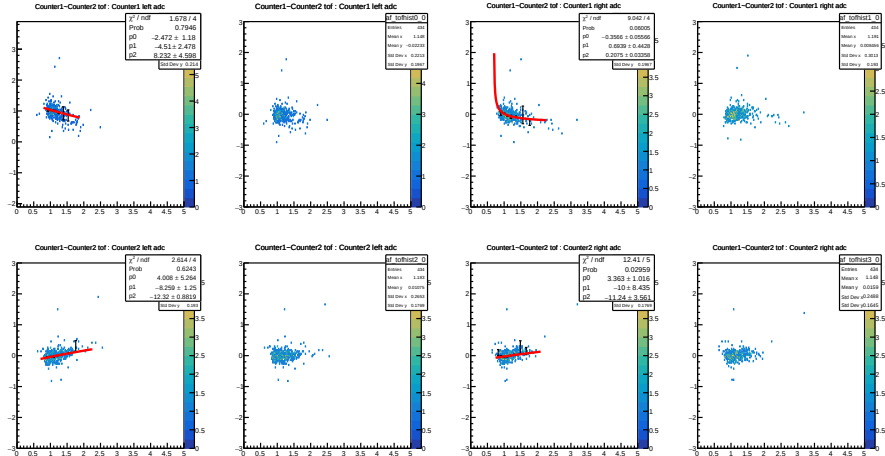
BH2 UL Pedestal& ADC



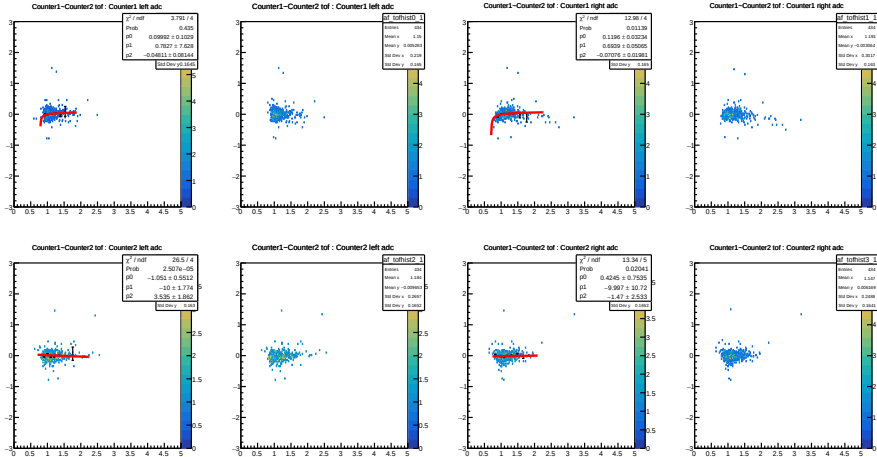
BH2 UR Pedestal& ADC



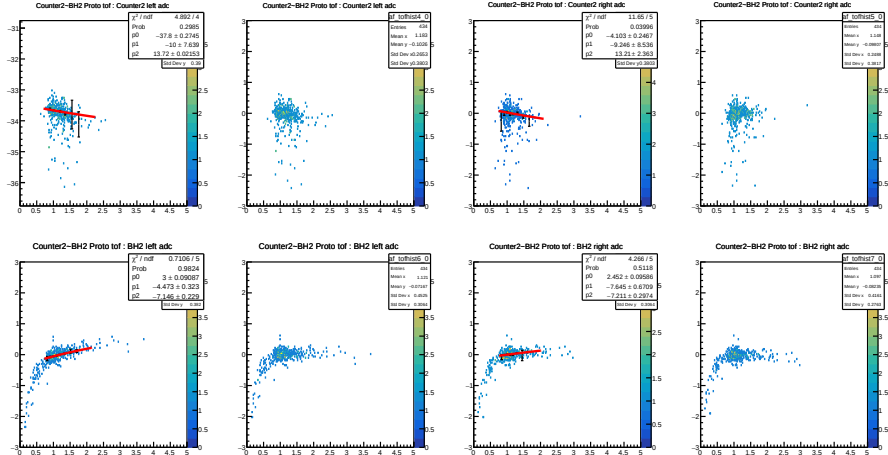
BH2U Timewalk



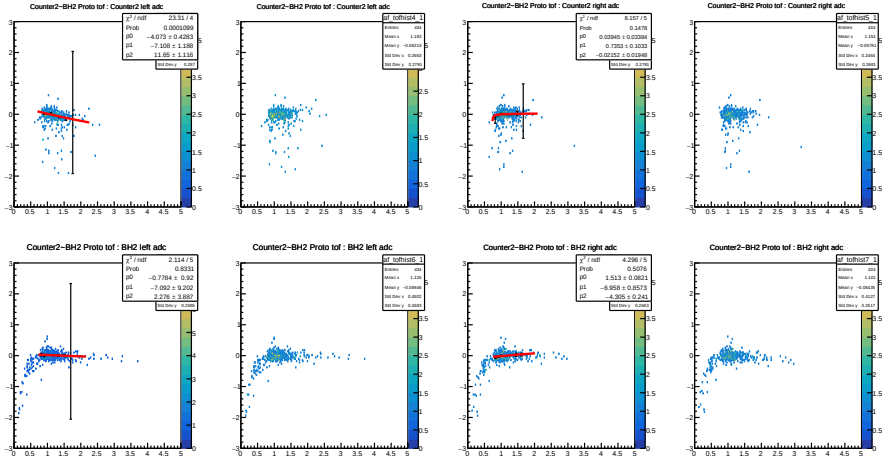
BH2U Timewalk



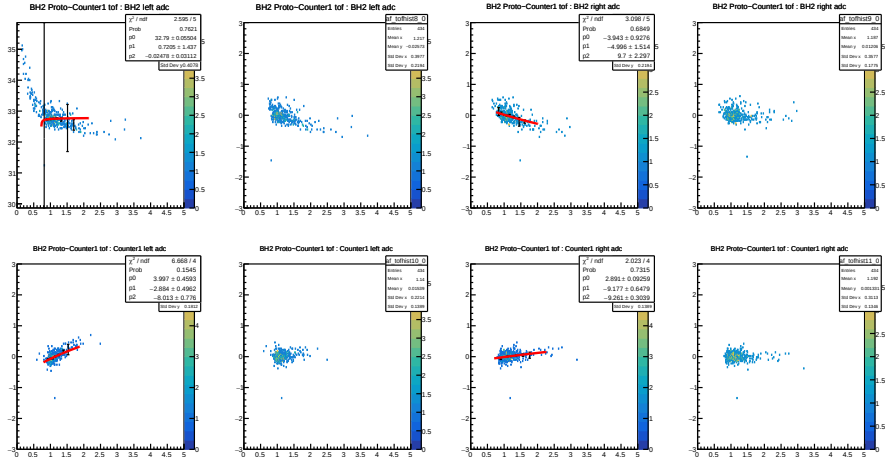
BH2U Timewalk



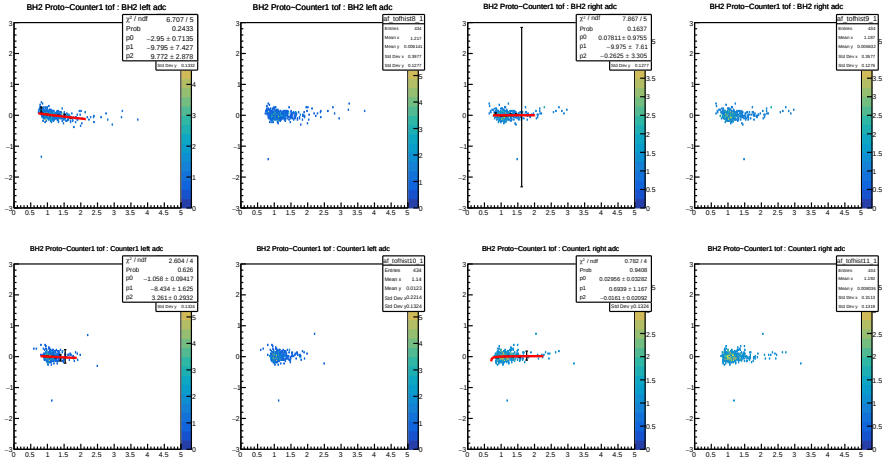
BH2U Timewalk



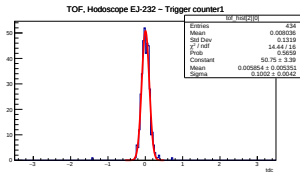
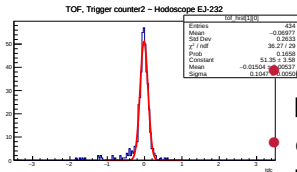
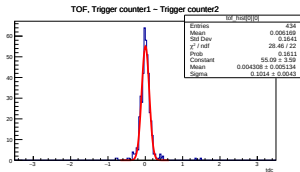
BH2U Timewalk



BH2U Timewalk



BH2U resolution

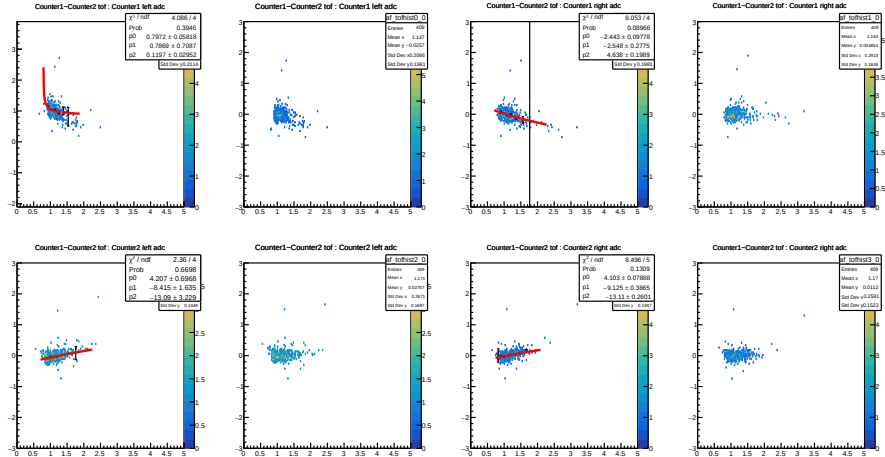


$$\sigma_{Trg0} = 68.4 \pm 5.86 \text{ ps}$$

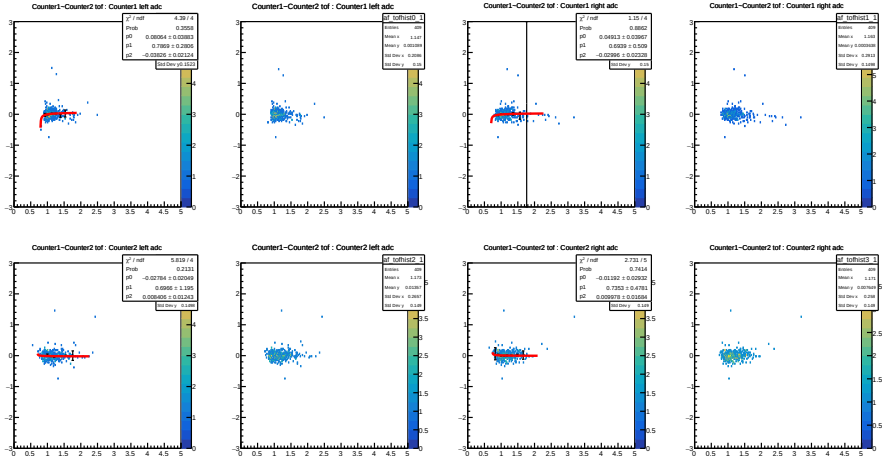
$$\sigma_{Trg1} = 74.8 \pm 5.36 \text{ ps}$$

$$\sigma_{BH2U} = 73.3 \pm 5.47 \text{ ps}$$

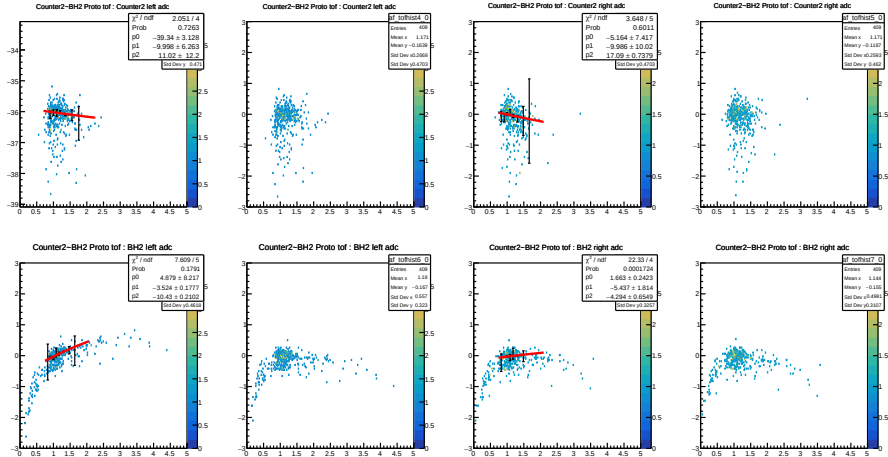
BH2D Timewalk



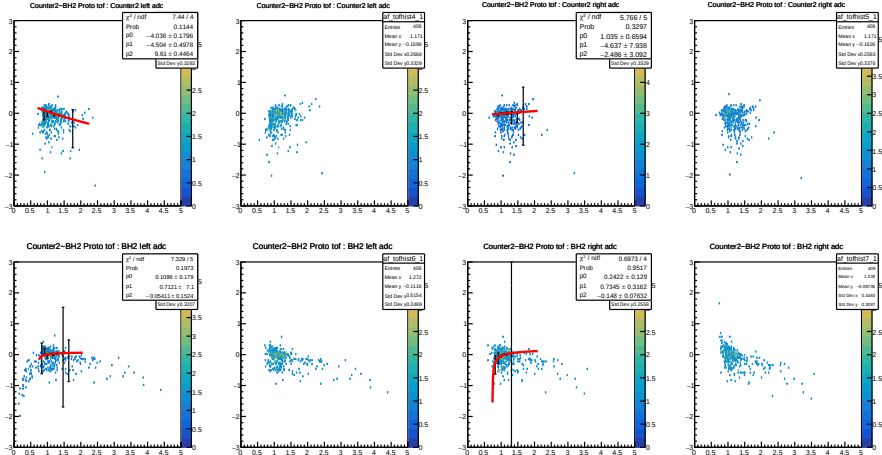
BH2D Timewalk



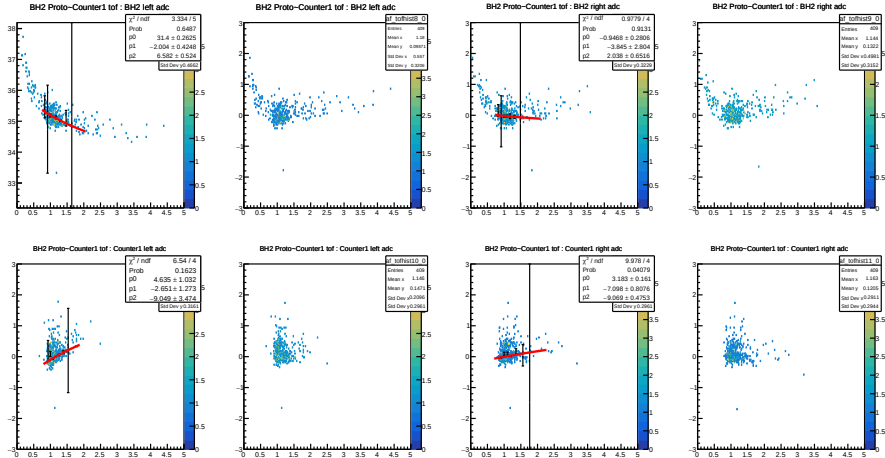
BH2D Timewalk



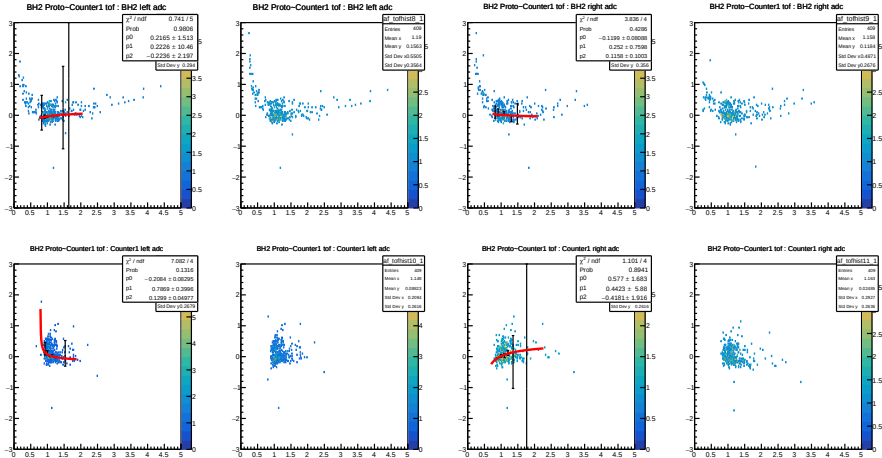
BH2D Timewalk



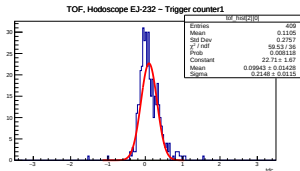
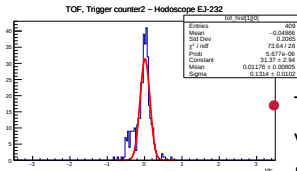
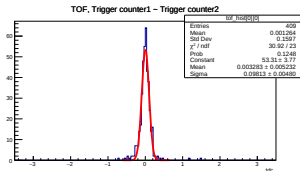
BH2D Timewalk



BH2D Timewalk



BH2D resolution



- Timewalk did not work well...
- Need more parameter tuning.

Backup

