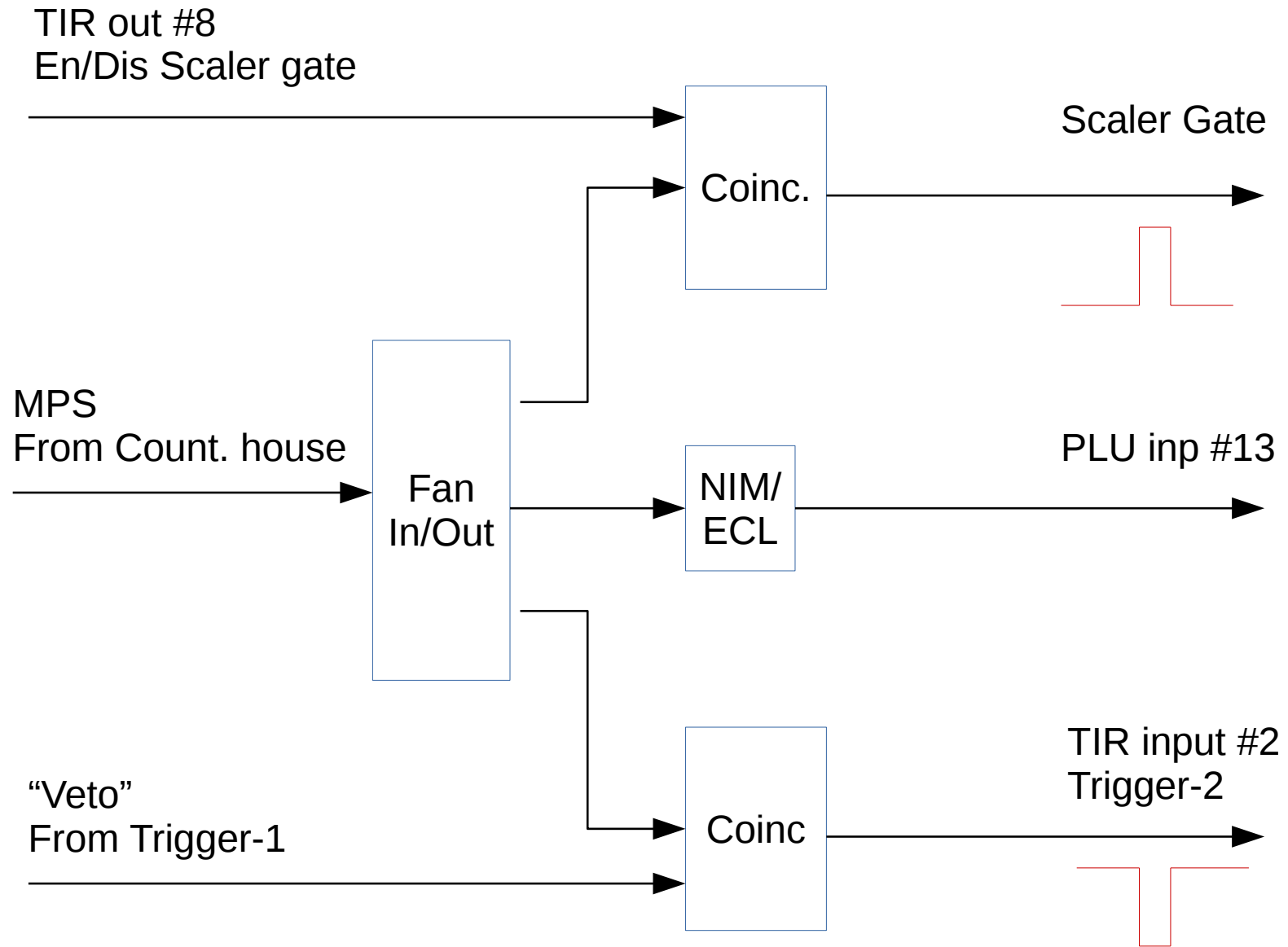


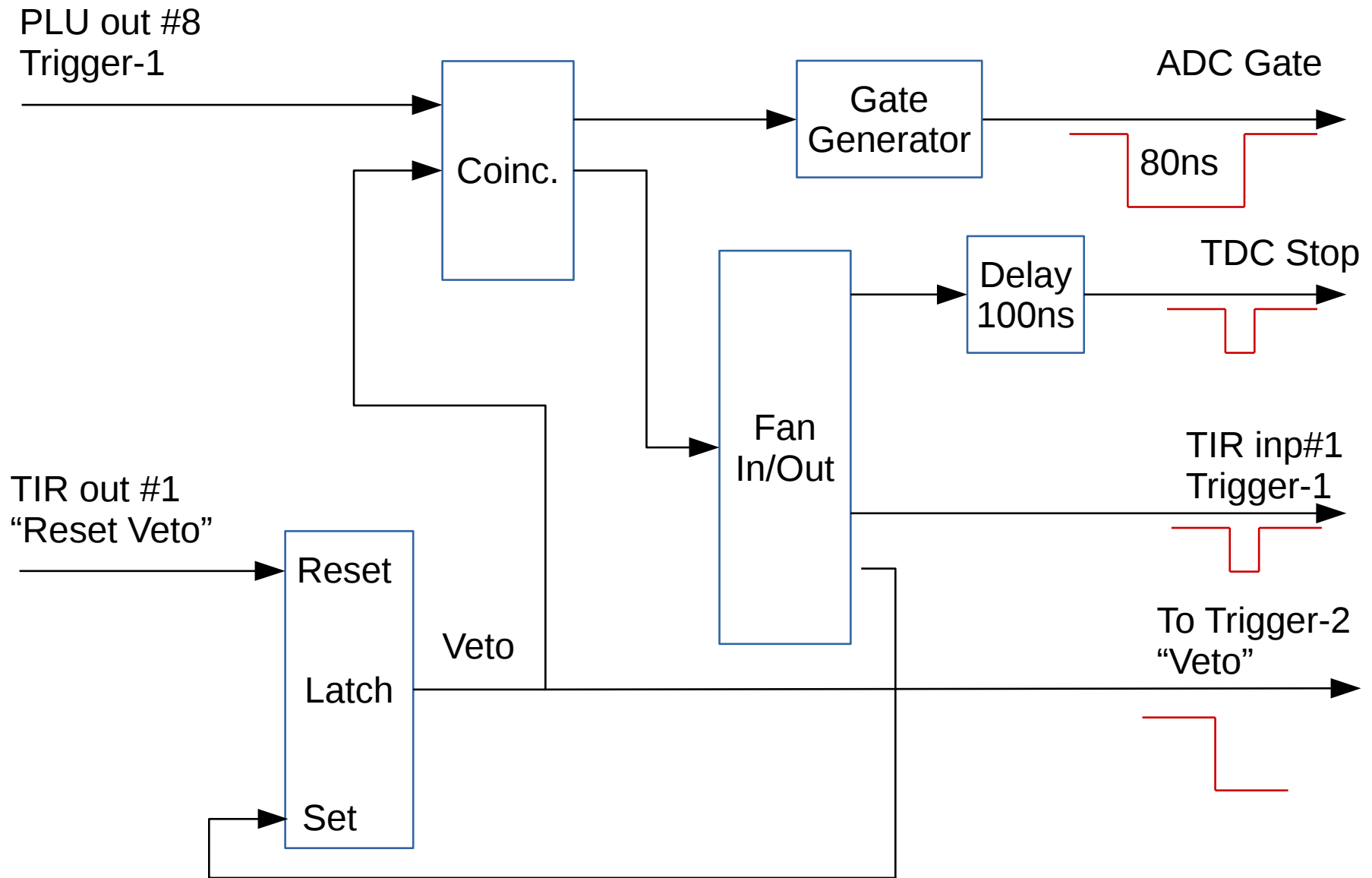
Signals in CODA data stream

- Two type events (triggers):
 - Scalers readout tag=0x20 trigger from MPS (helicity flipping) itrig(2)
 - Scalers isca() 32 channels
 - ADC-TDC readout tag=0x23, 0x25 trigger from output 8 PLU itrig(1)
 - ADC data iadc() 12 channels
 - TDC data itim() 16 channels
- Each event has signals:
 - Helicity State itrig(6) 0/1
 - QRT State itrig(8) 0/1
 - Trigger Type itrig(1), itrig(2) 0/1
 - VME CPU Clock 120Hz itick()

Trigger-2 Scalers Readout



Trigger-1 ADC-TDC Readout



Scalers signals

Scaler #1 LeCroy 1151E

inputs	signal
1	Left Single Arm (Cal * Apperture)
2	Left Single Arm (Cal * Apperture)
3	Coincidence (Left * Right Arms)
4	Accidental
5	Beam Charge (BCM)
6	PLU out 7; in LED setup - number of LED flashes
7	
8	
9	
10	(Helicitydelayed)*Clock(100kHz) (from 22 jul 2003, run 10952)
11	!MPS
12	PLU out #6 (TimerGenerator * helicity window)
15	Clock TimerGenerator

Scaler #2 LeCroy 1151E

inputs	signal
1	Left Single Arm (Cal * App)
2	Left Single Arm (Cal * App)
3	Coincidence (Left * Right Arms)
4	Accidental
5	Sum Left Calorimeter delayed (from 08/09/99)
6	Sum Right Calorimeter
7	Sum Left+Right Calorimeter
8	Apperture Left delayed
9	Apperture Right
10	Encoder for linear target motion (since 08/25/2005)
11	Encoder for lifting target motion (since 08/29/2005)

ADC-TDC signals

ADC LeCroy 2249A

inputs	signal
1	Left Calorimeter #1 (top)
2	Left Calorimeter #2
3	Left Calorimeter #3
4	Left Calorimeter #4 (bottom)
5	Right Calorimeter #1 (top)
6	Right Calorimeter #2
7	Right Calorimeter #3
8	Right Calorimeter #4 (bottom)
9	Sum Left Calorimeters
10	Sum Right Calorimeters
11	Sum Left + Right Calorimeter
12	Helicity State

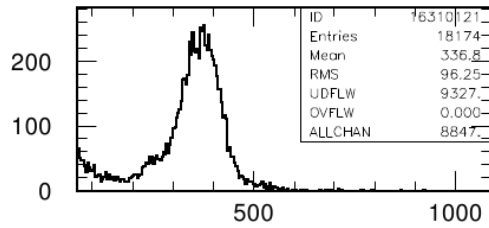
TDC LeCroy 2277

inputs: first 16 from delay unit outputs

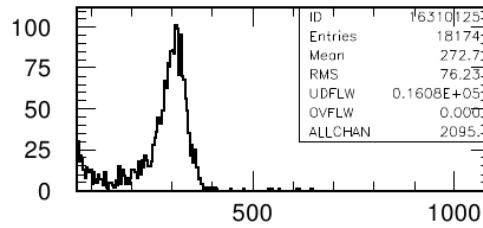
1	Sum Left Calorimeters
2	Sum Right Calorimeters
3	Sum Left + Right Calorimeters
4	Apperture Left
5	Apperture Right
6	Sum Left Calorimeters Delayed (114ns cable delay installed 5 Apr 1998)
7	Aperture Left Delayed (114ns cable delay installed 5 Apr 1998)
8	The pulser signal
9	LED pulser
11	Sum 16 x discr
12	Trigger ADC-2 gate
18	Coincidence * PLUinput(13) * "delayed" helicity

Calorimeter ADC spectrum

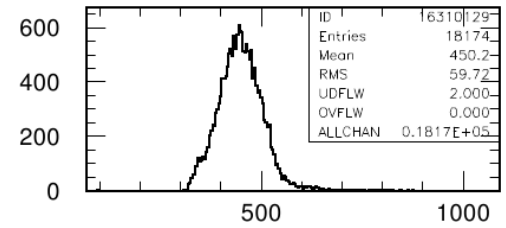
Moeller run=16310 ADC spectra – pedestals



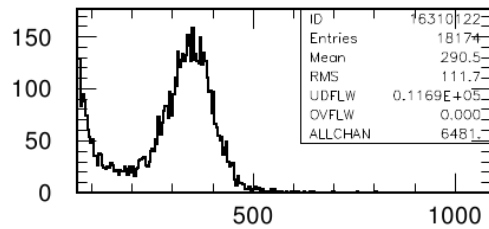
ADC 1 spectrum, pedestal subtracted



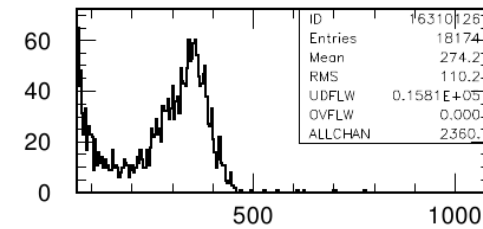
ADC 5 spectrum, pedestal subtracted



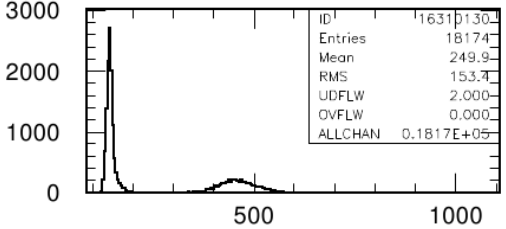
ADC 9 spectrum, pedestal subtracted



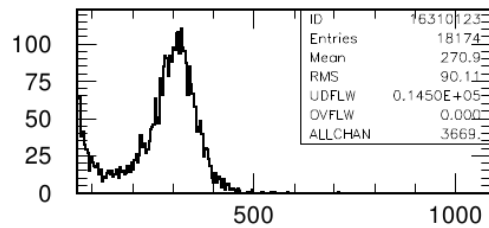
ADC 2 spectrum, pedestal subtracted



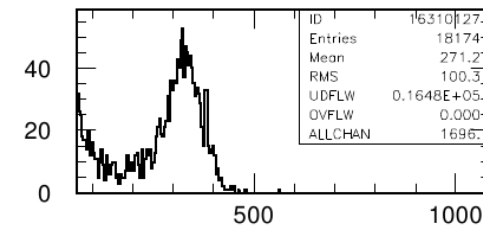
ADC 6 spectrum, pedestal subtracted



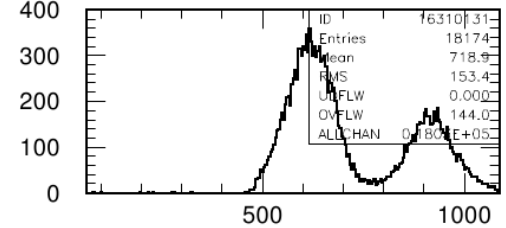
ADC 10 spectrum, pedestal subtracted



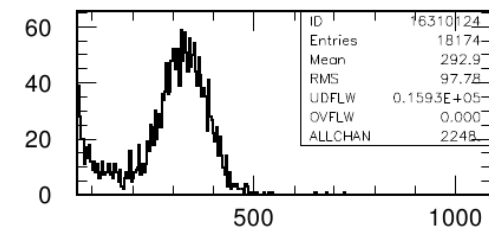
ADC 3 spectrum, pedestal subtracted



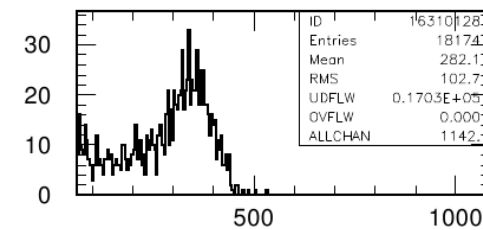
ADC 7 spectrum, pedestal subtracted



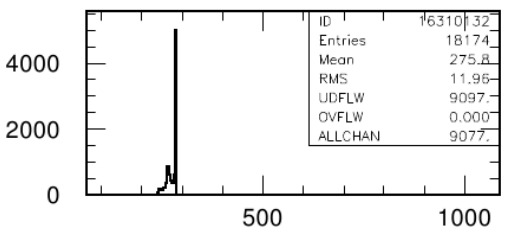
ADC 11 spectrum, pedestal subtracted



ADC 4 spectrum, pedestal subtracted



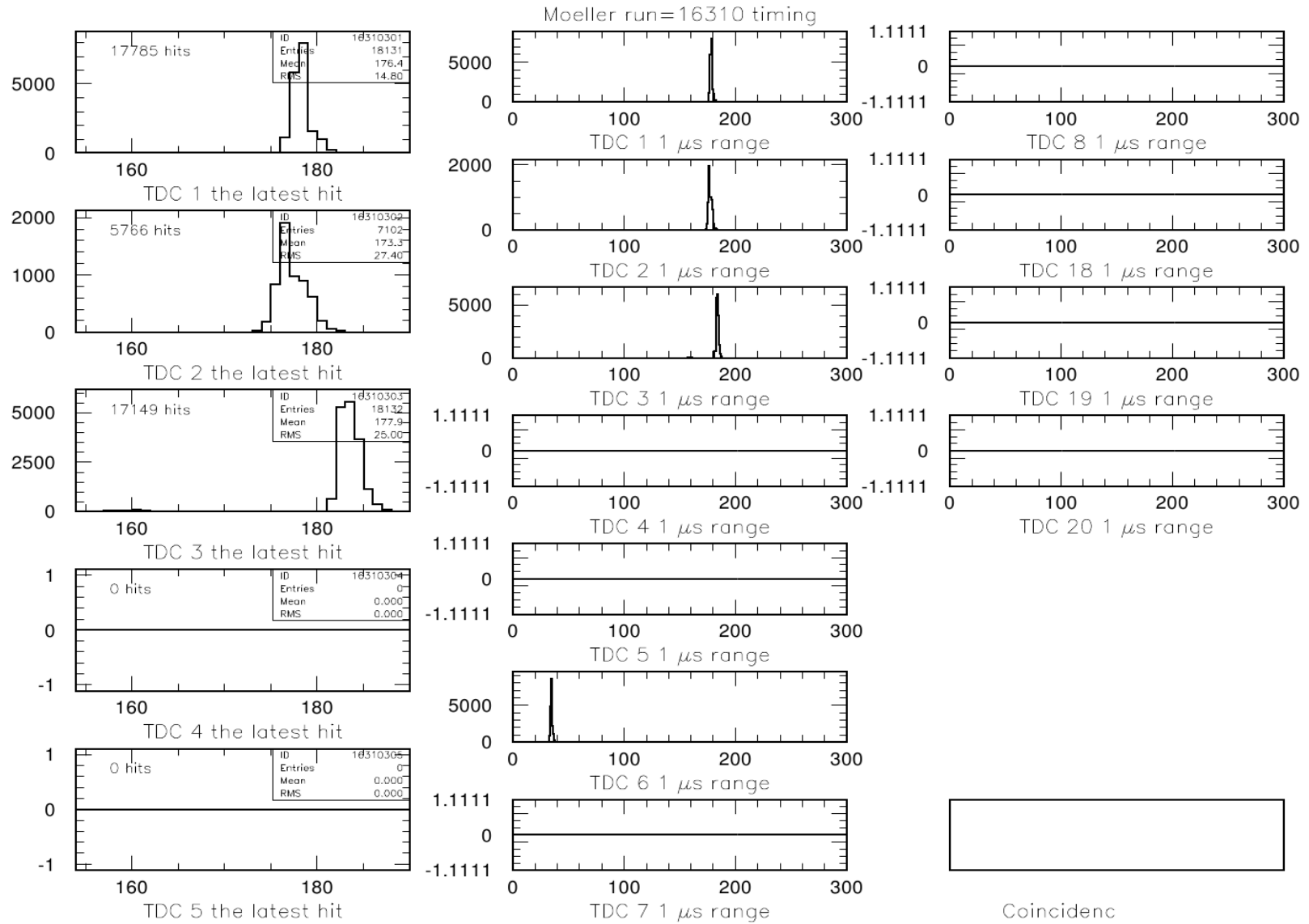
ADC 8 spectrum, pedestal subtracted



ADC 12 spectrum, pedestal subtracted

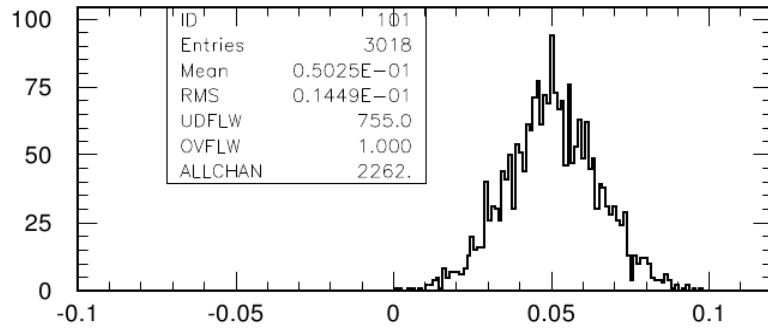
TDC time distribution

2019/04/05 11.34

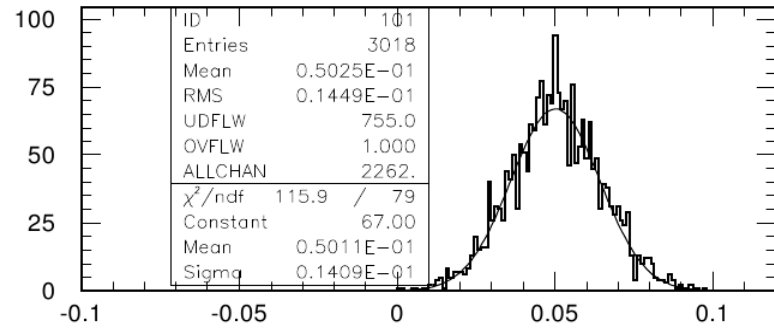


Analyzer output

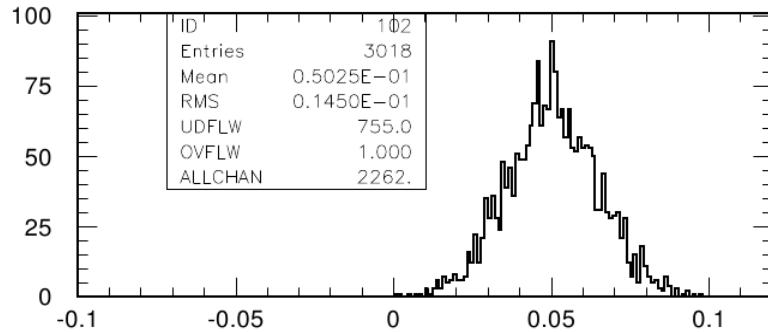
Moeller run=16310



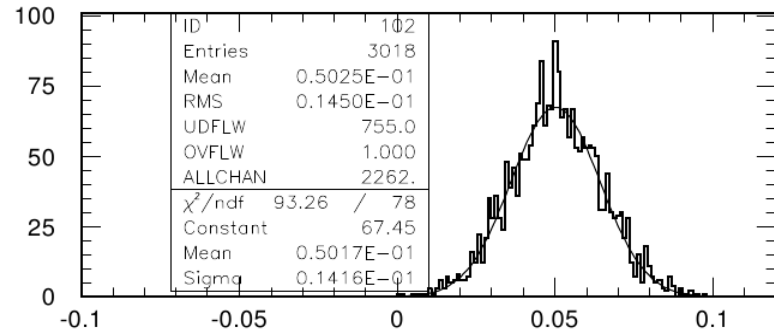
asym Calorimeter+Aperture



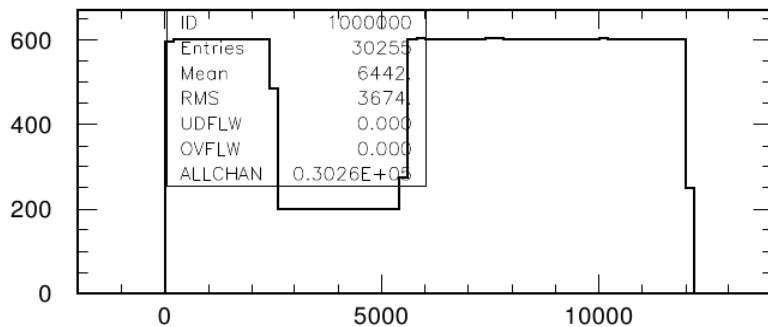
asym Calorimeter+Aperture



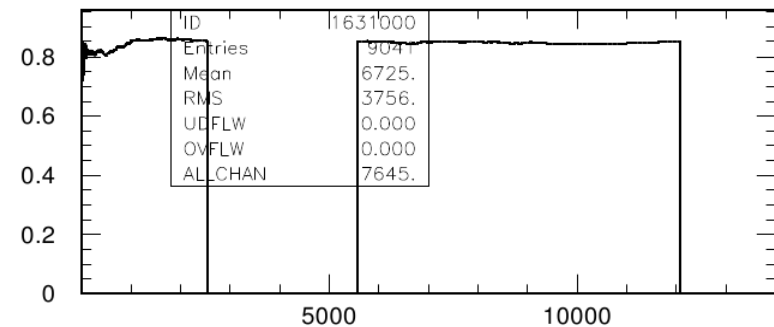
asym Calorimeter



asym Calorimeter



asymcyc.f(0)



Moeller run=16310 raw asymmetry

Summary Run Table

- Summary for run= 16310 Cycles: all= 12081 H+= 4521 H-= 4520
- T.angle= 0.00 An.power= 0.7365 T.pol= 0.0804 Norm= 1. NormBCM= 1. Coils= 46.6 A gate= 0.0330 RunType= 0. Factor= 16.8961
- no Meaning rate/cycle rate/sec raw asymmetry corrected asymmetry Polarization
- 1 Left arm 3943.2 119491.4 +/- 3112.7 0.0269 +/- 0.0184 0.0270 +/- 0.0002 0.4558 +/- 0.0028
- 2 Right arm 3770.9 114271.2 +/- 3021.7 0.0291 +/- 0.0186 0.0291 +/- 0.0002 0.4924 +/- 0.0029
- 3 Coincidence 1281.8 38841.0 +/- 1338.6 0.0502 +/- 0.0243 0.0503 +/- 0.0003 0.8493 +/- 0.0050
- 4 Coincidence accidentals 9.2 279.0 +/- 93.1 0.0542 +/- 0.2355 0.0543 +/- 0.0035 0.0000 +/- 0.0000
- 5 BCM 134.1 4064.1 +/- 145.1 -0.0001 +/- 0.0252 -0.0001 +/- 0.0004 0.0000 +/- 0.0000
- 6 Left arm accidentals / LED puls 1281.0 38818.6 +/- 1338.2 0.0502 +/- 0.0243 0.0503 +/- 0.0003 0.0000 +/- 0.0000
- 7 Timer 3339.7 101202.0 +/- 14.3 -0.0000 +/- 0.0001 -0.0000 +/- 0.0001 0.0000 +/- 0.0000
- 8 Timer no helicity window in PLU 3339.7 101202.0 +/- 14.3 -0.0000 +/- 0.0001 0.0000 +/- 0.0002 0.0000 +/- 0.0000
- 9 Left arm 2-nd 3943.2 119491.4 +/- 3112.7 0.0269 +/- 0.0184 0.0270 +/- 0.0002 0.4558 +/- 0.0028
- 10 Right arm 2-nd 3770.9 114271.2 +/- 3021.7 0.0291 +/- 0.0186 0.0291 +/- 0.0002 0.4924 +/- 0.0029
- 11 Coincidence 2-nd 1281.7 38839.5 +/- 1338.6 0.0502 +/- 0.0243 0.0503 +/- 0.0003 0.8492 +/- 0.0050
- 12 Coincidence accidentals 2-nd 9.0 273.9 +/- 92.1 0.0546 +/- 0.2374 0.0547 +/- 0.0035 0.0000 +/- 0.0000
- 13 Left LG delayed 3943.2 119491.5 +/- 3112.6 0.0269 +/- 0.0184 0.0270 +/- 0.0002 0.0000 +/- 0.0000
- 14 Right LG 3771.0 114271.3 +/- 3021.7 0.0291 +/- 0.0186 0.0291 +/- 0.0002 0.0000 +/- 0.0000
- 15 Sum LG 9916.5 300498.9 +/- 6913.4 0.0162 +/- 0.0162 0.0163 +/- 0.0001 0.0000 +/- 0.0000
- 16 Left App 0.0 0.0 +/- 0.0 0.0000 +/- 0.0000 0.0000 +/- 0.0000 0.0000 +/- 0.0000
- 17 Right App 1.0 30.3 +/- 0.0 0.0000 +/- 0.0000 0.0001 +/- 0.0105 0.0000 +/- 0.0000
- Factor=16.8961
- Asymmetry(Calorimeter+Aperture)=0.0502497
- Asymmetry (Calorimeter only)=0.0502477
- Polarization (Calorimeter)=84.899
- Polarization(Calorimeter+Aperture)=84.9024+/-0.501113
-
- Moller measurements: rates/sec and asymmetries
- run Left Right Coinc. Accid. BCM Clock Cor.Asymm Polarization angl An.Pow Pol.Targ PolarizationL/R Asym BCM coil Factor
- 16299 116397 110087 37583 261. 3874. 101200 0.0492+/- 0.0003 0.8312+/- 0.0049 0.00 0.7365 0.0804 0.4492 0.4881 0.00014 0.00036 46.6 16.896
- 16305 111611 107988 36456 245. 3637. 101200 0.0502+/- 0.0003 0.8482+/- 0.0049 0.00 0.7365 0.0804 0.4562 0.4862 0.00008 0.00032 46.6 16.896
- 16310 119491 114271 38840 279. 4064. 101201 0.0503+/- 0.0003 0.8493+/- 0.0050 0.00 0.7365 0.0804 0.4558 0.4924 -0.00009 0.00038 46.6 16.896