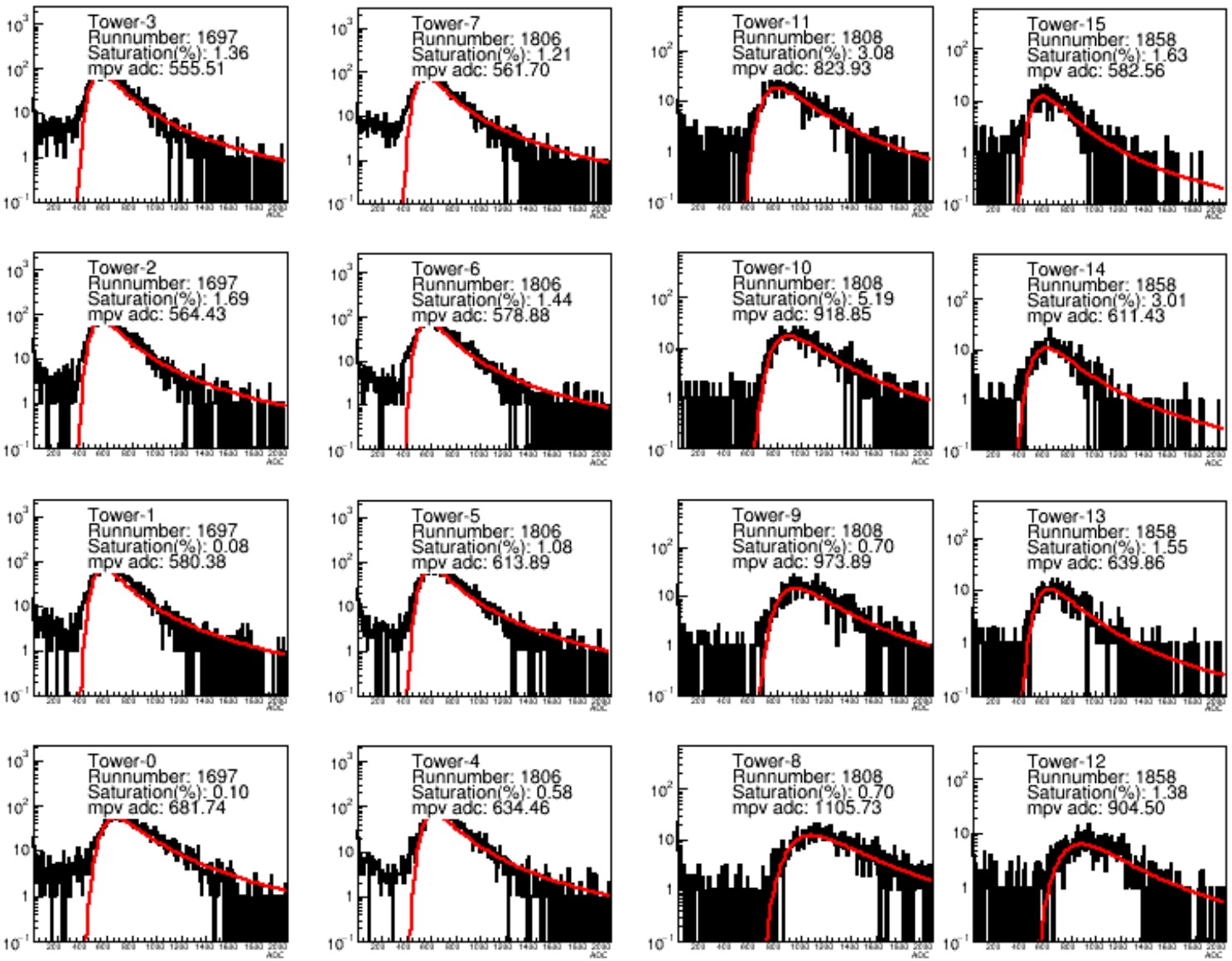
HCal Energy Calibrations: Cosmics

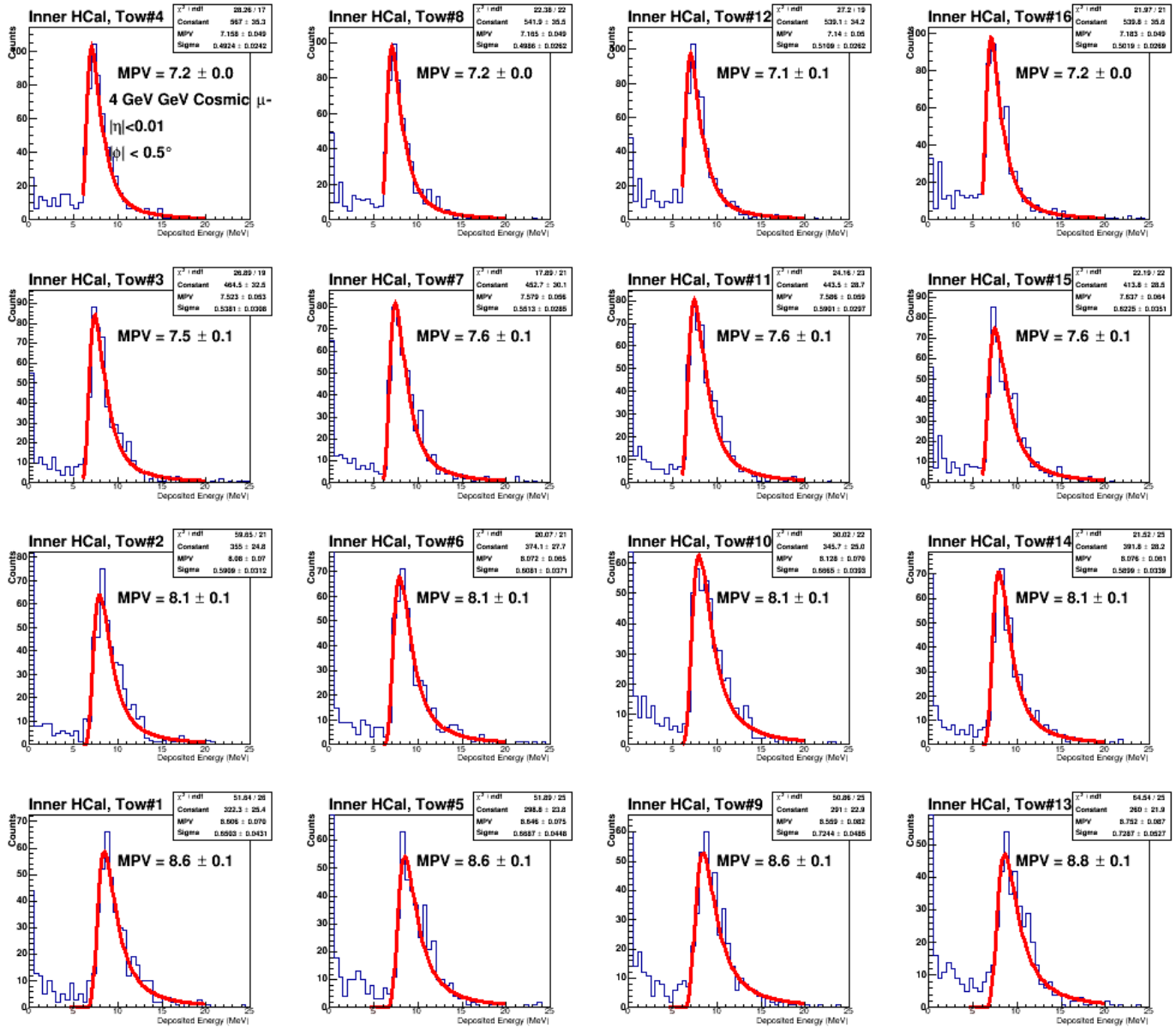
Tim Rinn

ADC values from cosmics: Inner High Gain



Energy values from Cosmics simulations: Inner

Note: towers start counting at 1 in the sims



Cosmics Calibrations: Inner

Tower Layout

3	7	11	15
2	6	10	14
1	5	9	13
0	4	8	12

Inner: Energy MPV (cosmics sims) MeV

7.2	7.2	7.1	7.2
7.5	7.6	7.6	7.6
8.1	8.1	8.1	8.1
8.6	8.6	8.6	8.8

Inner low gain: ADC MPV (cosmics data)

16.38	19.21	25.63	19.35
19.18	19.29	28.32	19.64
19.45	19.74	30.97	20.31
20.91	20.14	34.3	27.69

Inner low gain: Energy/ADC

0.44	0.37	0.28	0.37
0.39	0.39	0.27	0.39
0.42	0.41	0.26	0.40
0.41	0.43	0.25	0.32

Inner High gain: ADC MPV (cosmics data)

555.5	561.7	823.9	583
564.4	578.9	919	611
580.4	613.9	974	640
671.7	634.5	1106	905

Inner High gain: Energy/ADC

0.0130	0.0128	0.0086	0.0123
0.0133	0.0131	0.0083	0.0124
0.0140	0.0132	0.0083	0.0127
0.0128	0.0136	0.0078	0.0097

Cosmics Calibrations: Outer

Tower Layout

3	7	11	15
2	6	10	14
1	5	9	13
0	4	8	12

Outer low gain:
ADC MPV (cosmics data)

32.88	34.05	39.13	37.91
33.98	38.45	39.85	37.38
35.09	36.27	38.95	33.76
34.58	33.85	37.58	37.71

Outer low gain:
Energy/ADC

0.22	0.21	0.18	0.19
0.21	0.18	0.18	0.19
0.19	0.19	0.17	0.20
0.19	0.20	0.18	0.18

Outer: Energy MPV (cosmics sims)
MeV

7.2	7.2	7.2	7.2
7	7	7	7
6.8	6.8	6.8	6.8
6.7	6.7	6.7	6.7

Outer High gain:
ADC MPV (cosmics data)

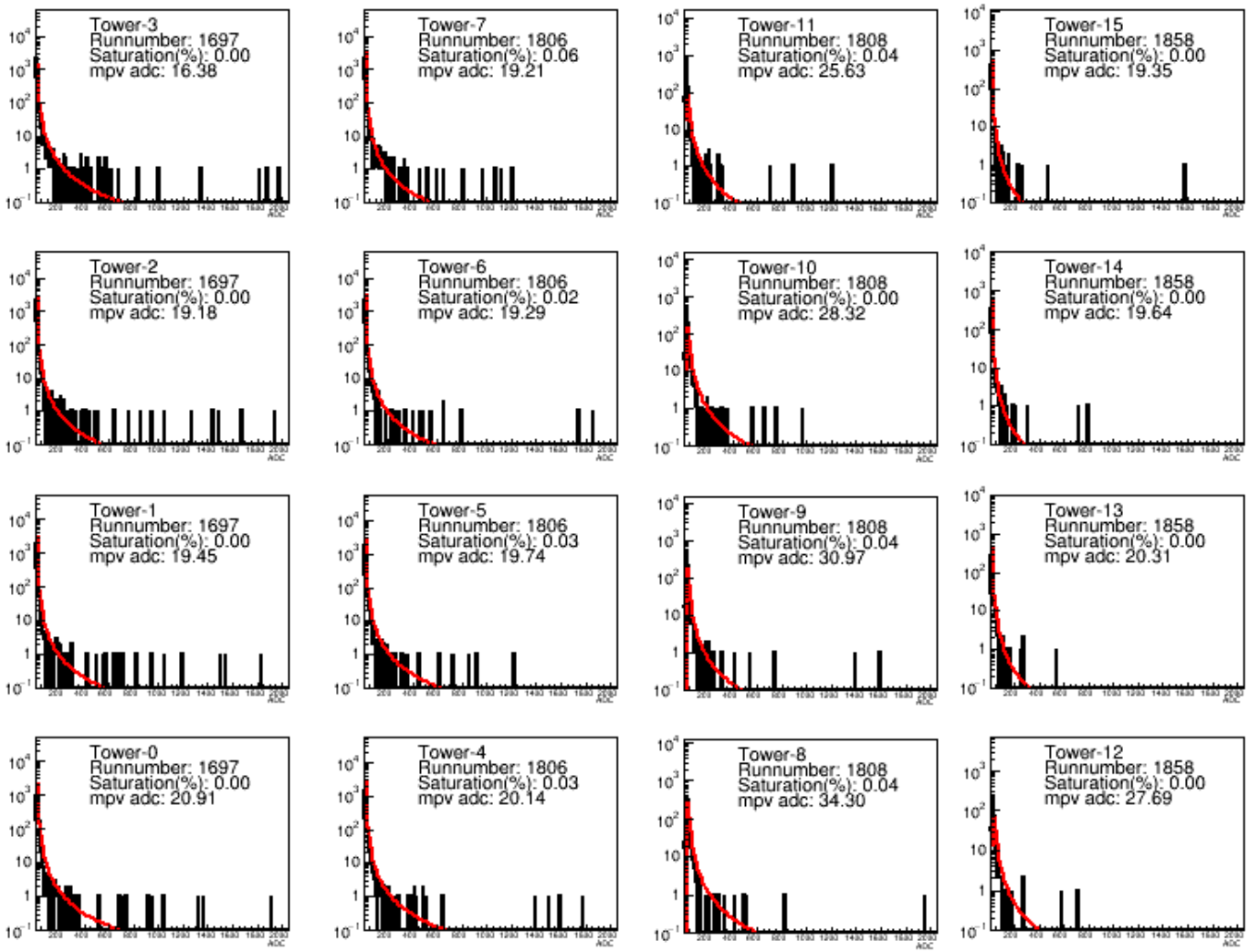
521.4	551.1	632.9	597.2
543.0	563.6	638.7	579.4
570.2	587.8	347.1	546.0
549.3	NA	594.2	595.7

Outer High gain:
Energy/ADC

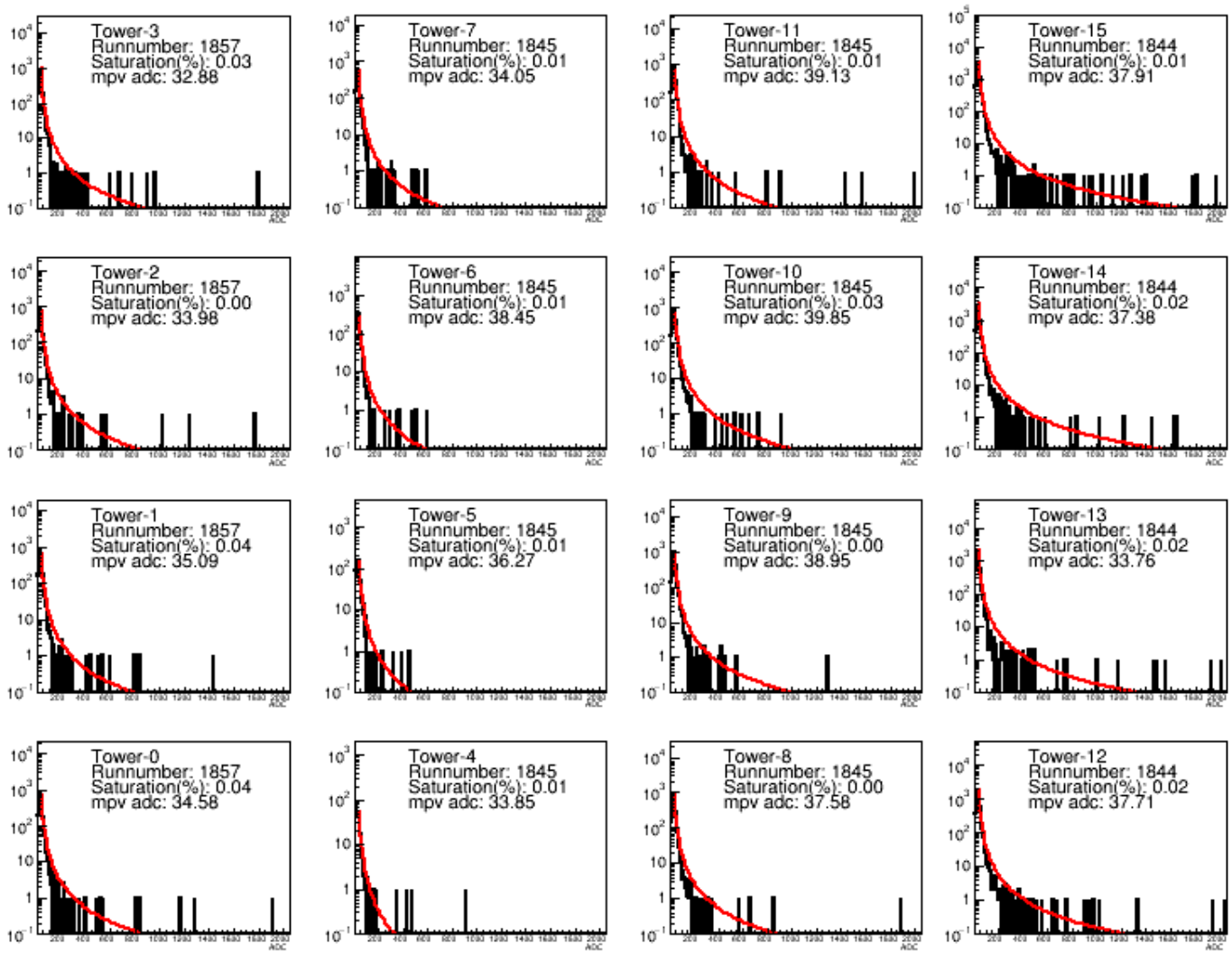
0.0138	0.0131	0.0114	0.0121
0.0129	0.0124	0.0110	0.0121
0.0119	0.0116	0.0196	0.0125
0.0122	NA	0.0113	0.0112

Backups

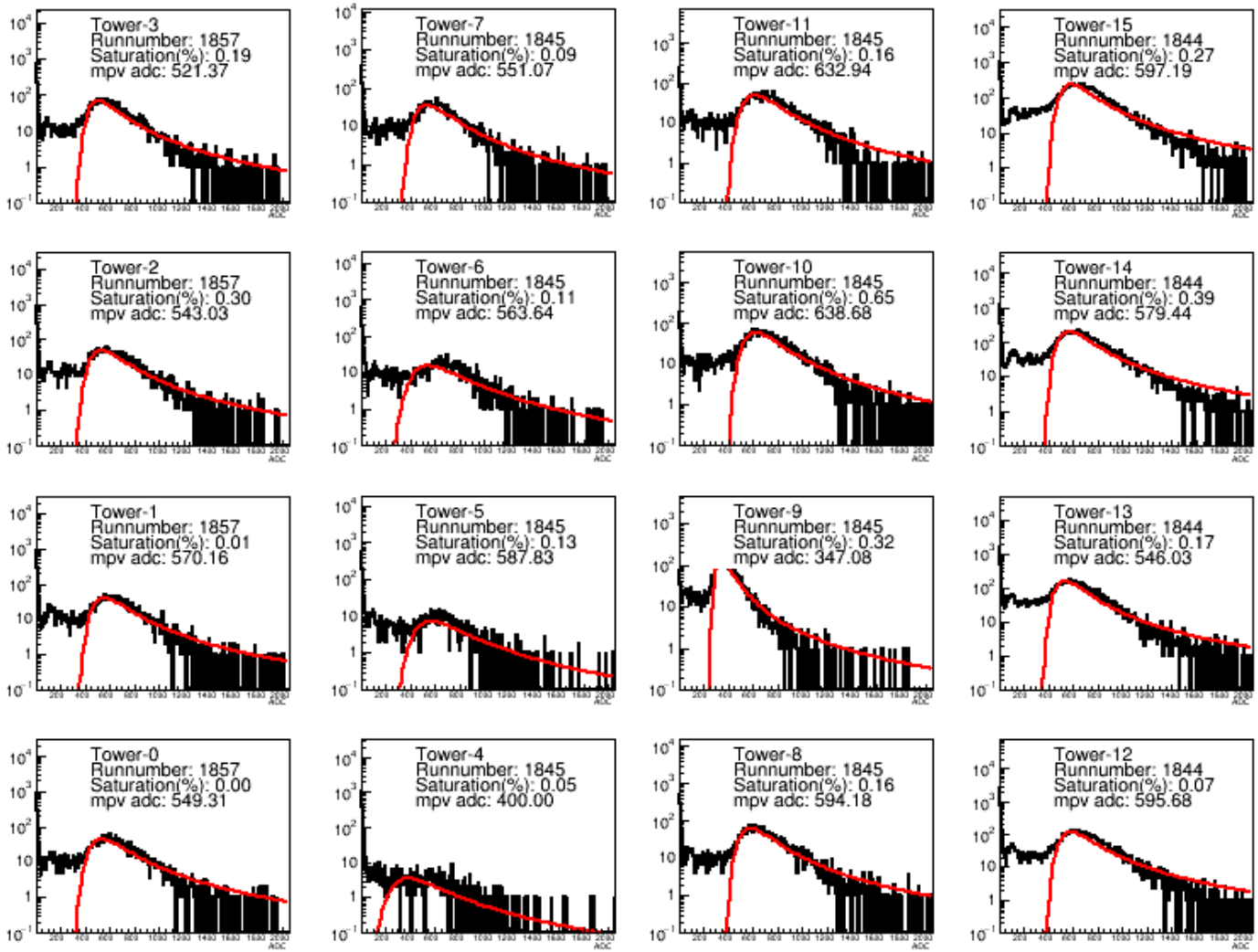
Inner: Low Gain

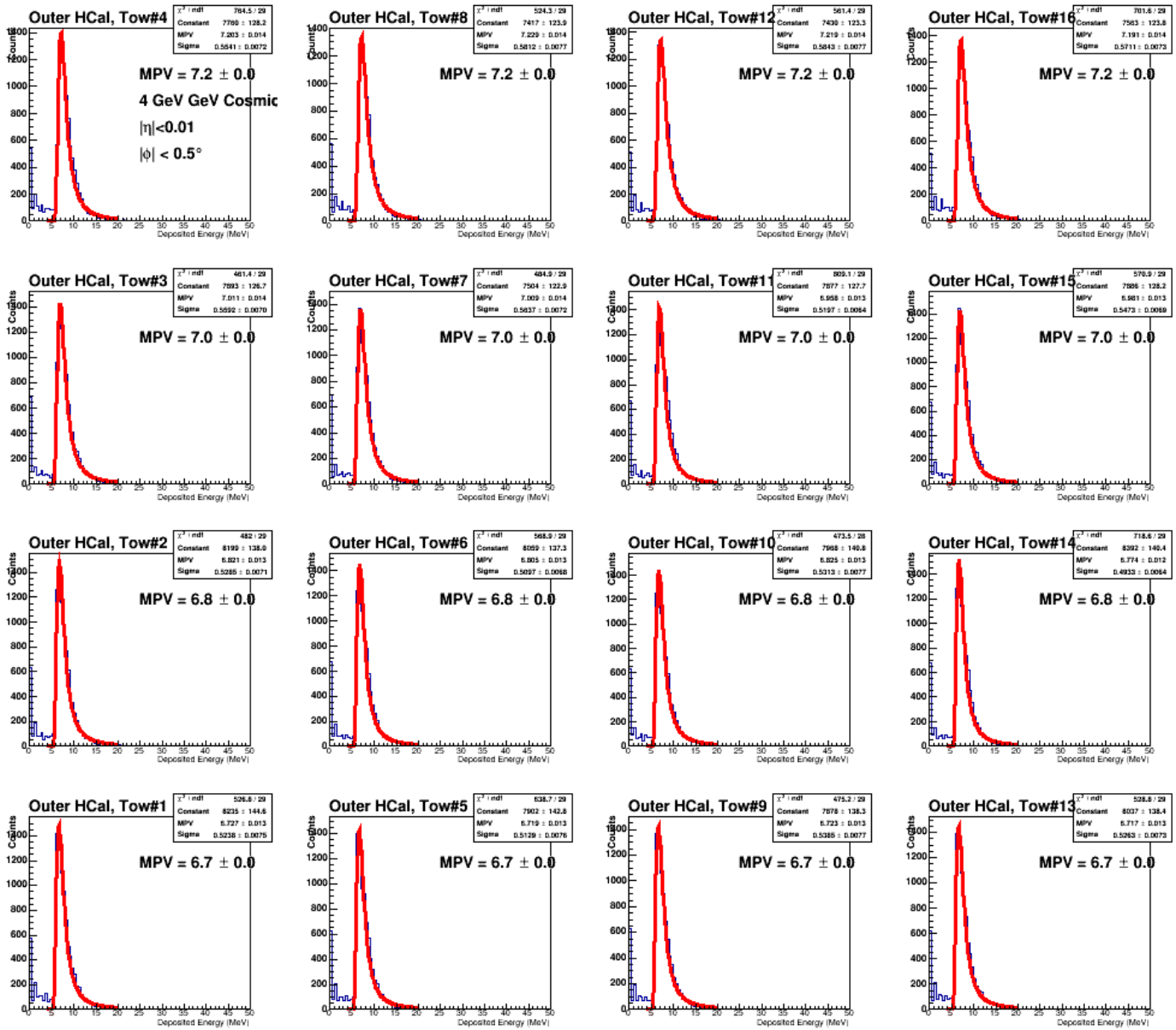


Outer: Low Gain



Outer: High Gain



No clear peak for fit

Energy values from Cosmics simulations: Outer