

Outline:

- Charge values exceeding the saturation limit and exist infinite charge values.
- Causes of the above phenomena.
- Offline check of the number of BESIII events and the number of events after mixing CGEM signals.

Examination of raw data distributions:

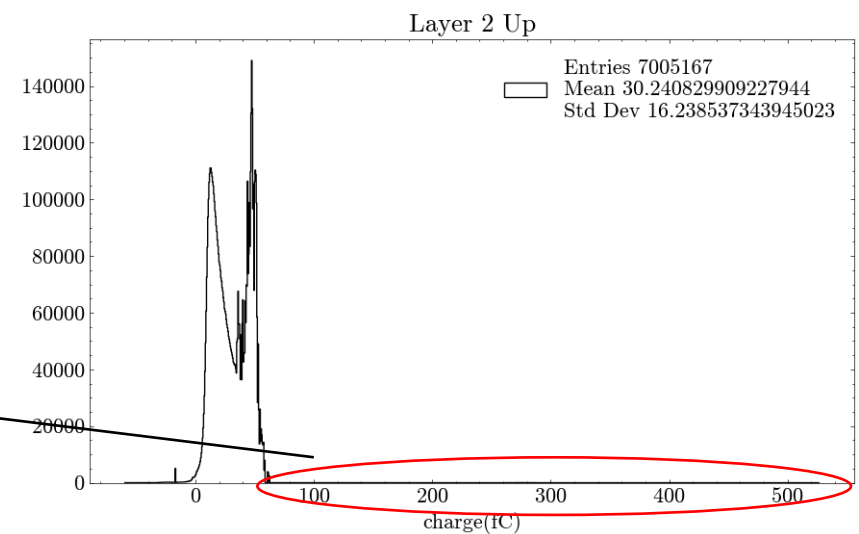
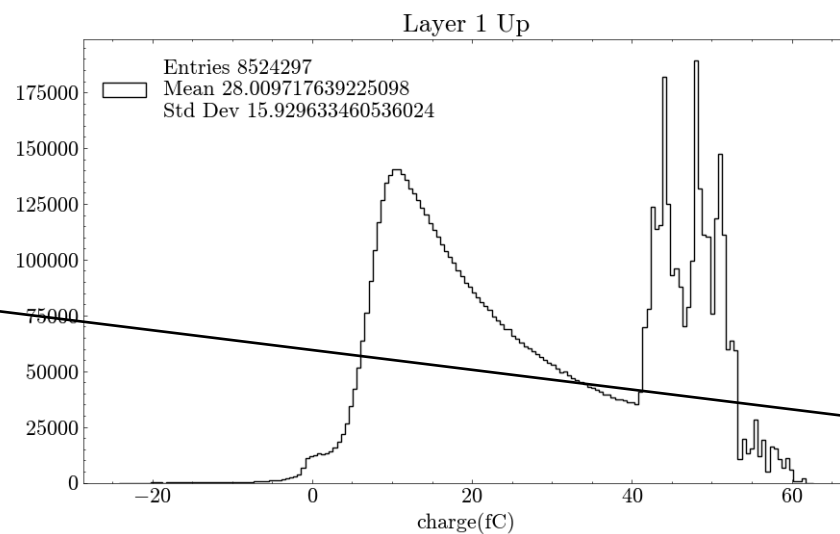
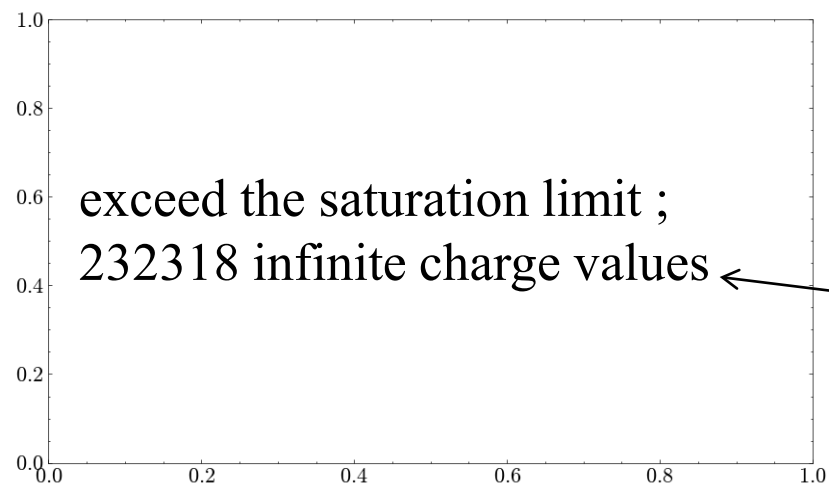
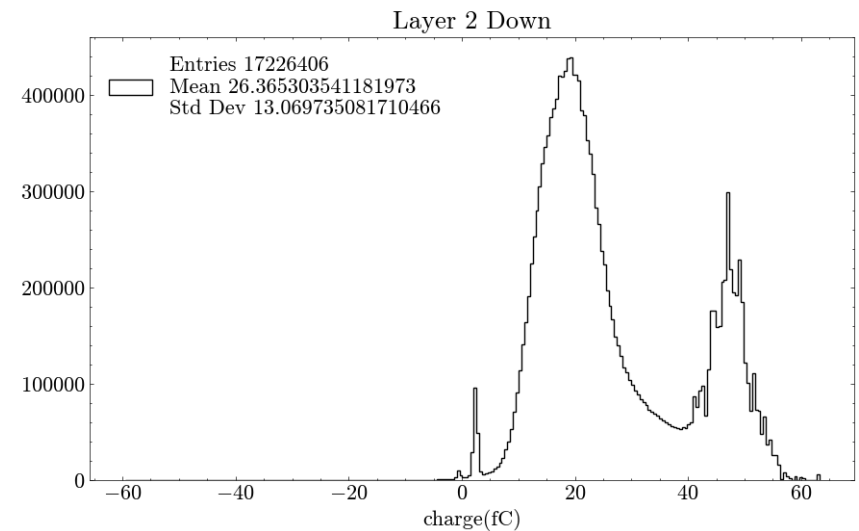
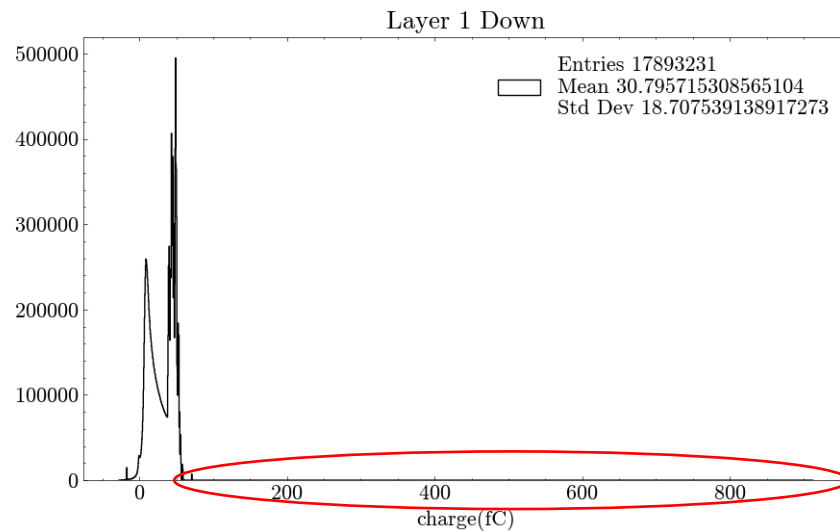
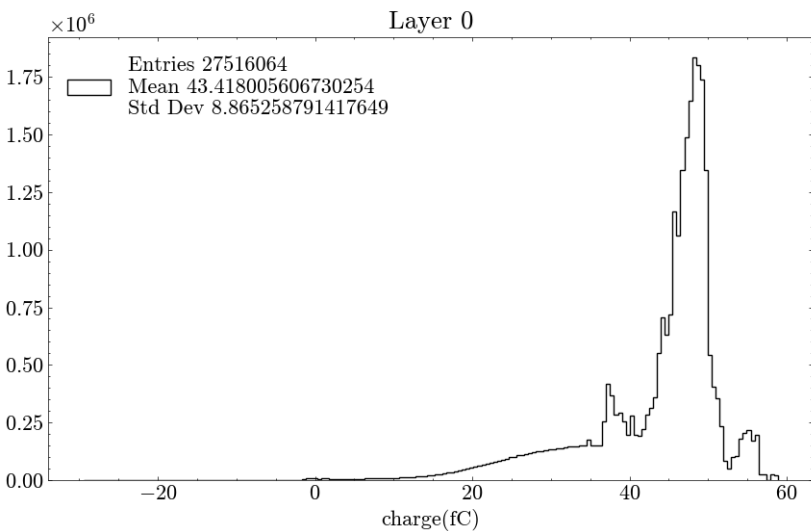
- Raw time distribution: Collision data and cosmic ray data.
- Event start time distribution.
- Time distribution after subtracting the event start time: Collision data and cosmic ray data.
- Distribution of strip firing counts.
- Scatter plot of firing strip ID relative to event time.

Examination of reconstructed cluster distributions:

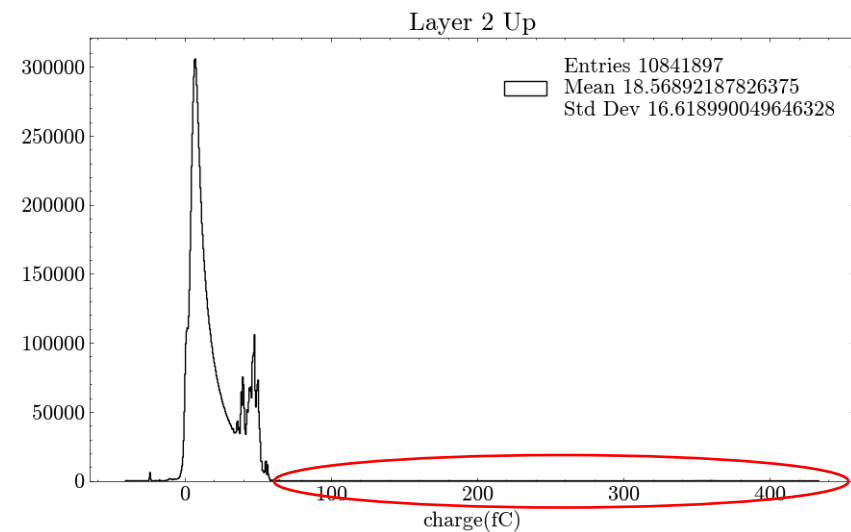
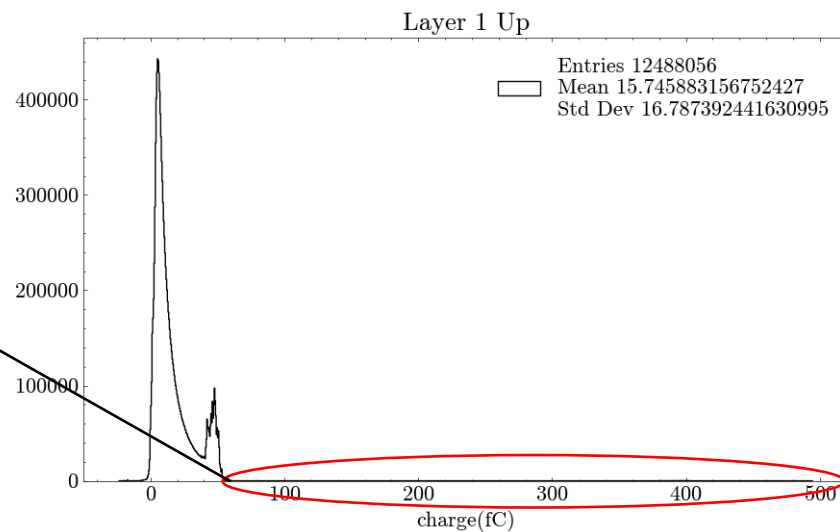
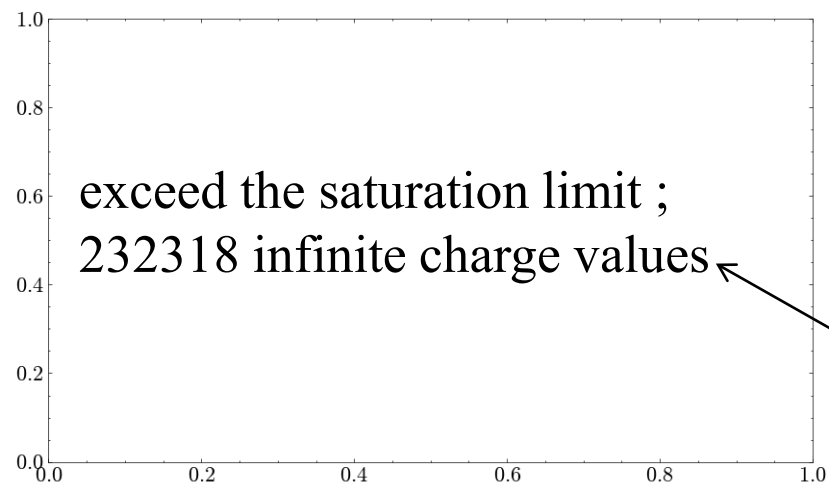
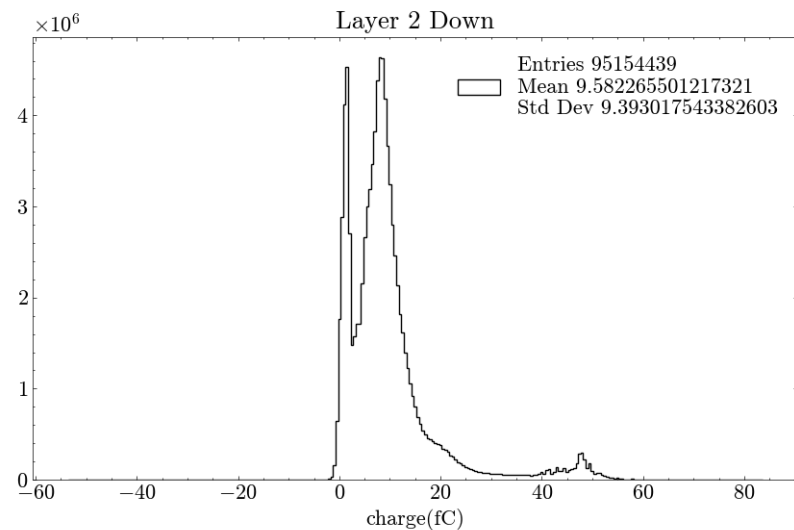
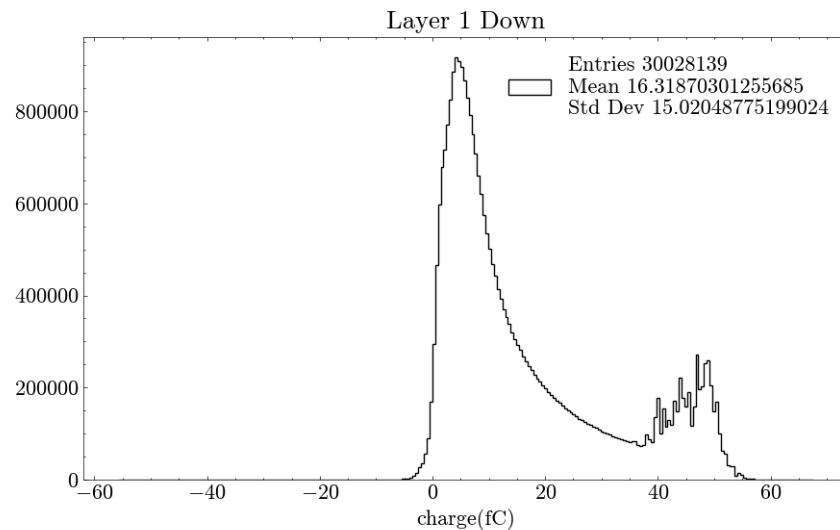
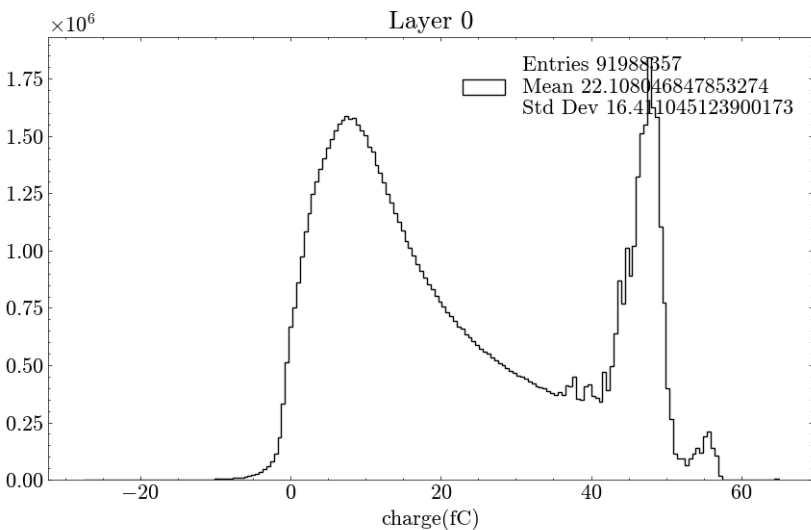
- Distribution of reconstructed cluster center positions.
- Cluster charge distribution.
- Cluster size distribution.

By Di Jiang
Professor: Ye Yuan
Software Group, EPD, IHEP

X Distribution of Q based on 85965 mergeraw



V Distribution of Q based on 85965 mergeraw



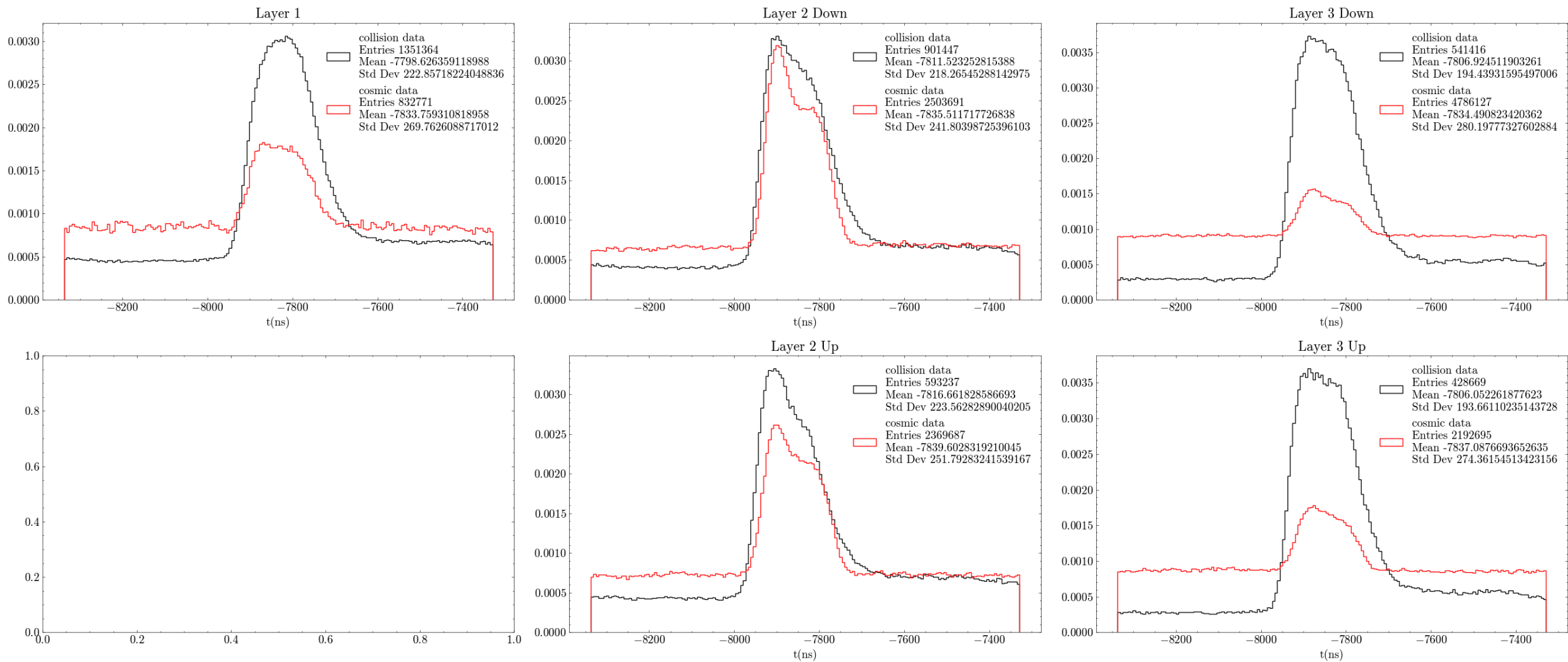
Issues observed in the converted charge values:

- Infinite values: Occur when the divisor is 0.
- Values exceeding the saturation limit: Occur when the divisor is 1.

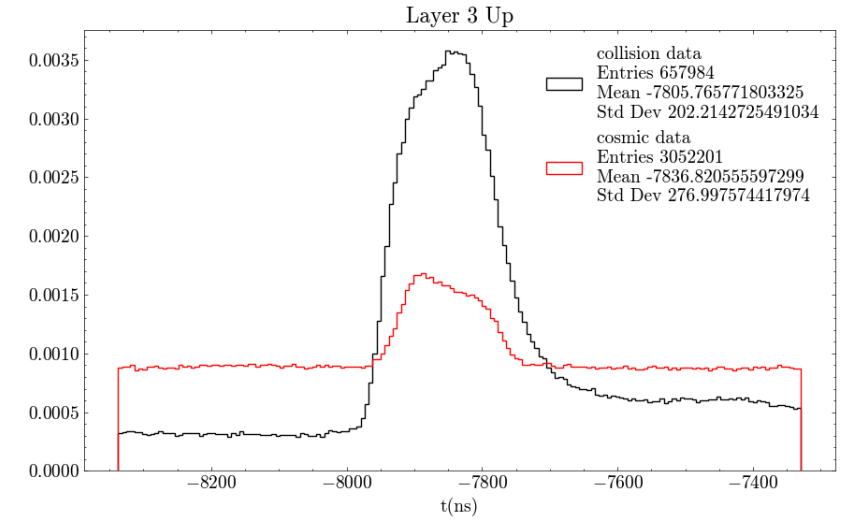
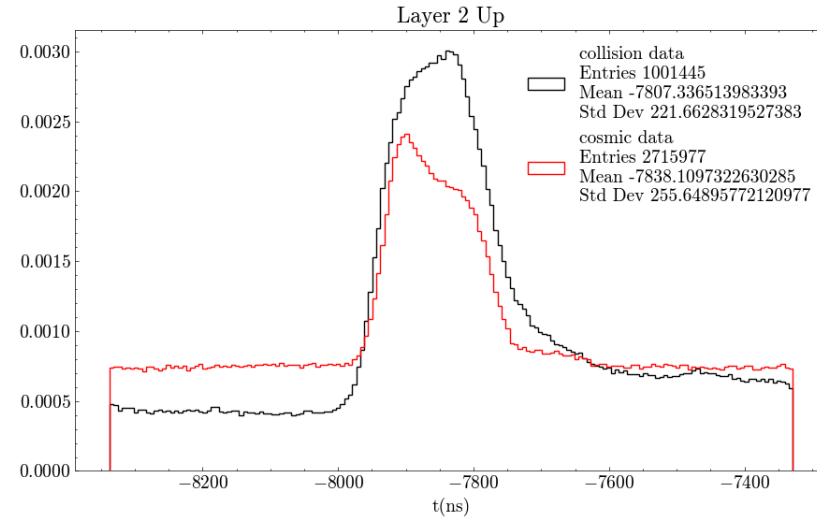
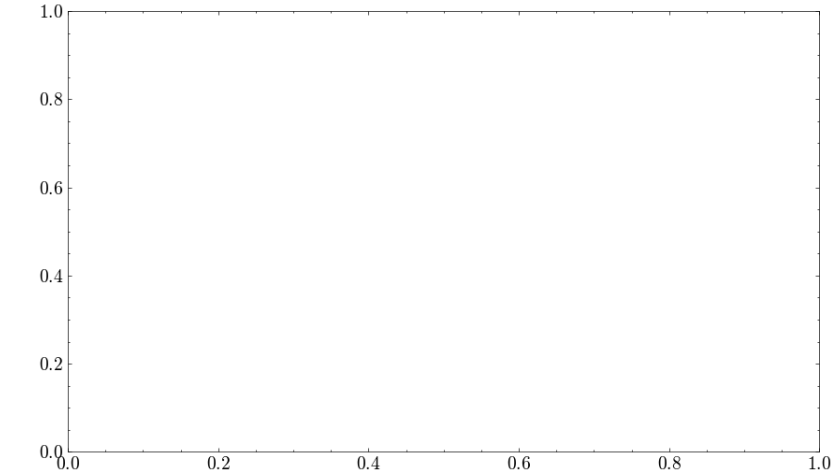
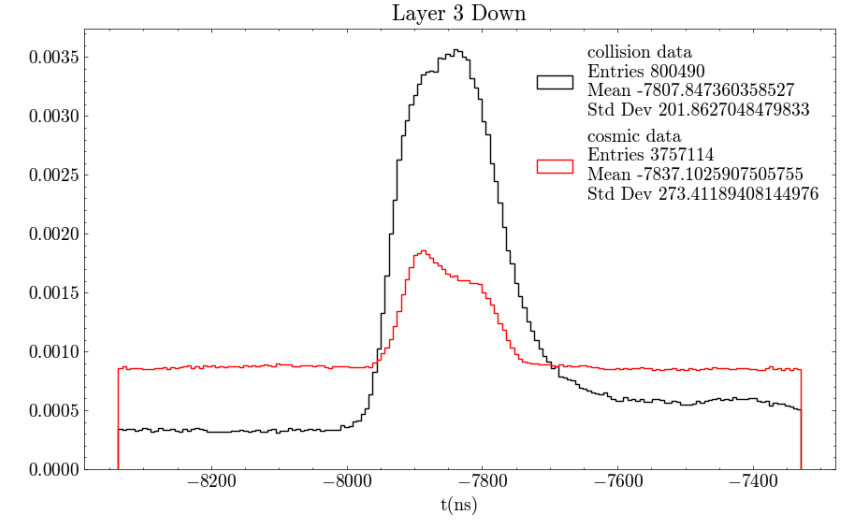
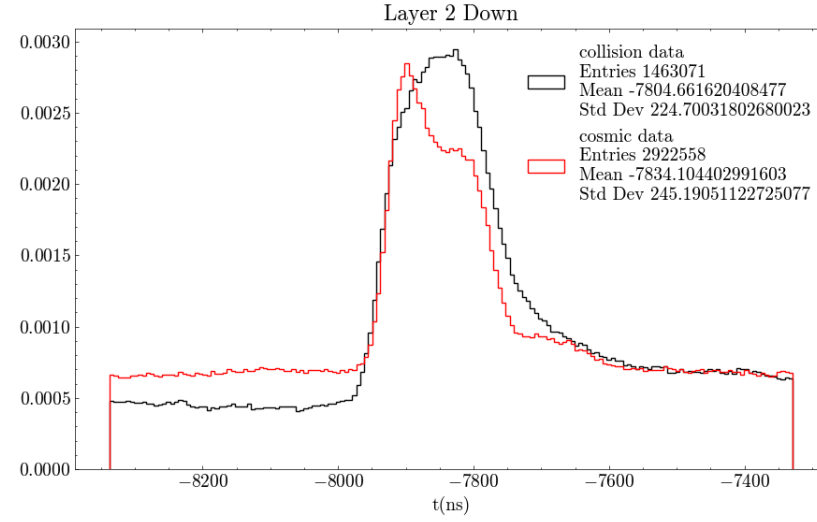
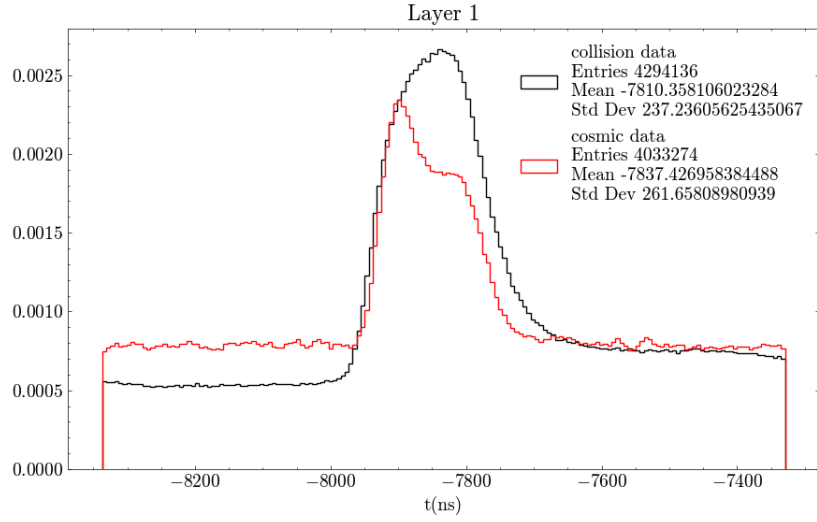
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0	33	1	4	6	36	0	V1088	0	0
0	44	1	4	6	36	0	V1063	0	0
0	12	1	5	6	36	1	X644	0	0
1	43	4	4	18	69	0	V196	0	0
1	13	9	5	36	65	1	V1061	0	0
1	29	10	5	39	64	1	V1834	0	0
1	41	10	5	39	64	1	V1842	0	0
1	50	10	5	39	64	1	X879	0	0
2	28	14	2	53	55	0	X864	0	0
2	3	16	3	61	59	1	X1568	0	0
2	34	19	1	70	74	1	X802	0	0
0	52	1	5	6	36	1	X661	1	1
1	20	5	5	22	78	1	X555	1	1
1	10	6	1	23	72	1	V1101	1	1
1	25	6	7	26	79	1	V1318	1	1
1	57	6	7	26	79	1	V1326	1	1
1	42	9	5	36	65	1	X602	1	1
1	50	10	1	37	71	1	X699	1	1
2	54	15	5	58	53	1	V2484	1	1
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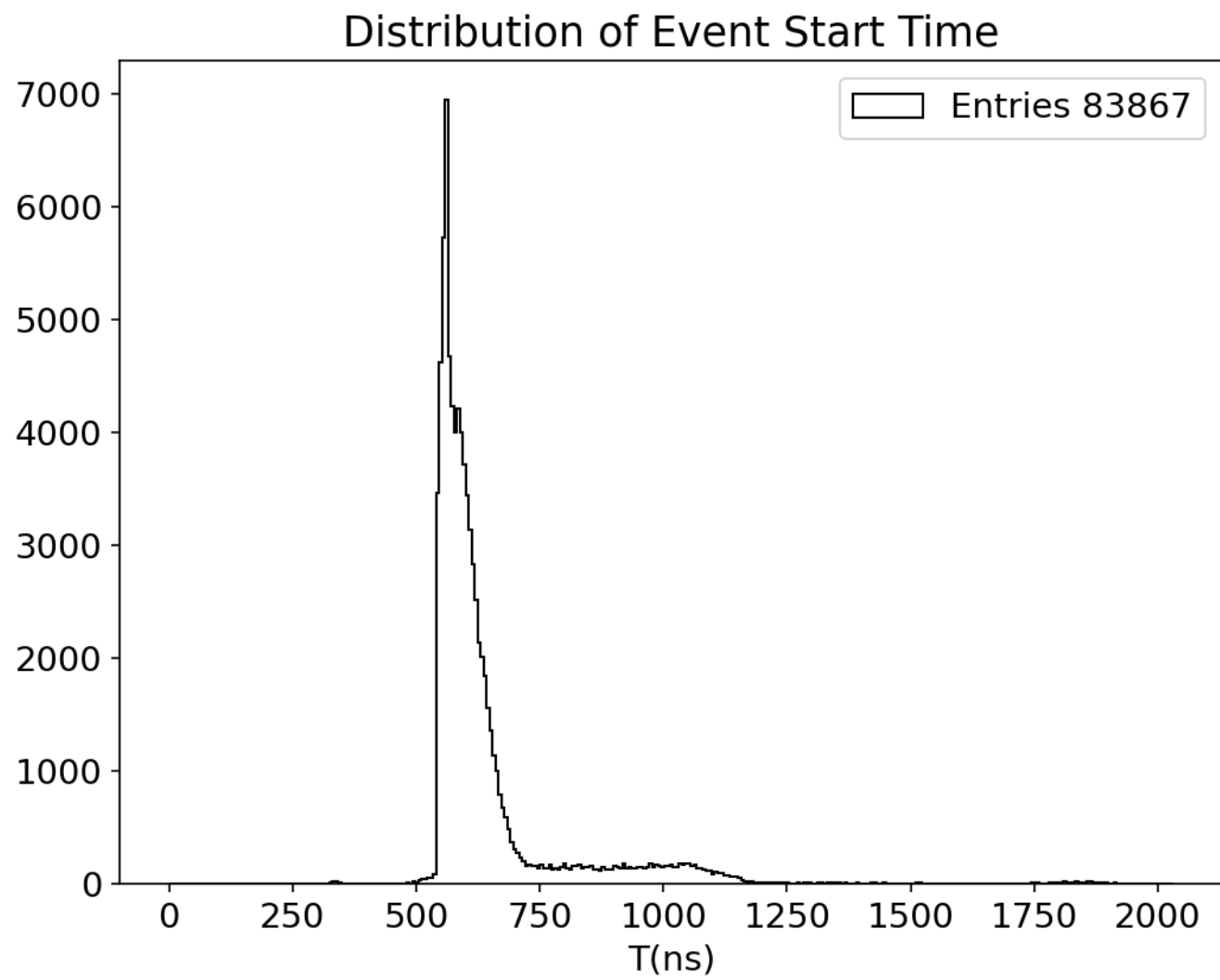
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	BESIII events	CGEM merged events	BESIII events	CGEM merged events
Events number	1419539	1419536	2361477	2361477
曾婷轩 reports	1345083	1419536	2295918	2361478

X Distribution of Raw T (cosmic run 85191 data vs run'0086044 collision data)



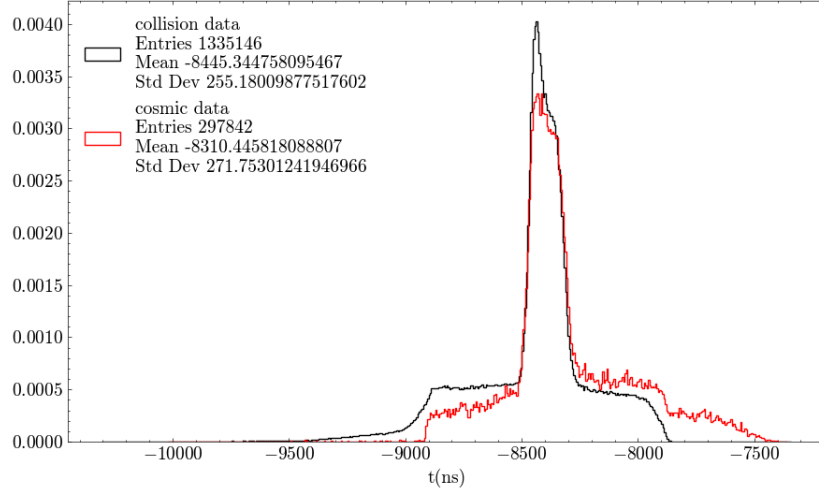
V Distribution of Raw T (cosmic run 85191 data vs run'0086044 collision data)



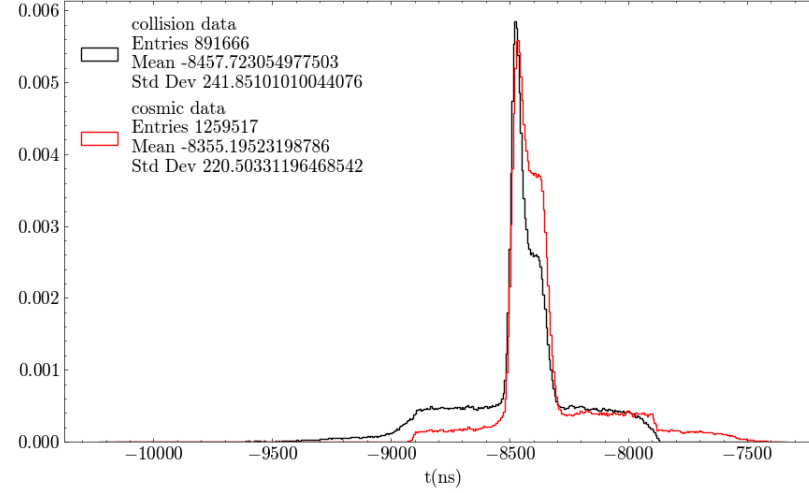


X Distribution of T-est (cosmic run 85191 data vs run'0086044 collision data)

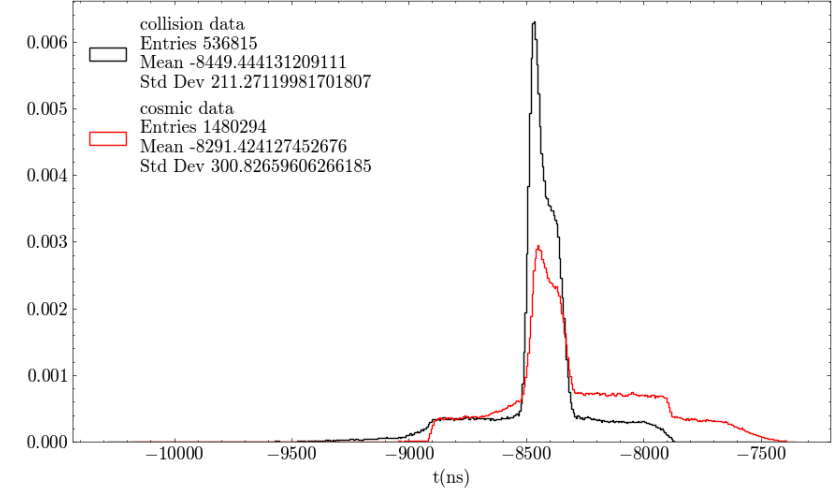
Layer 1



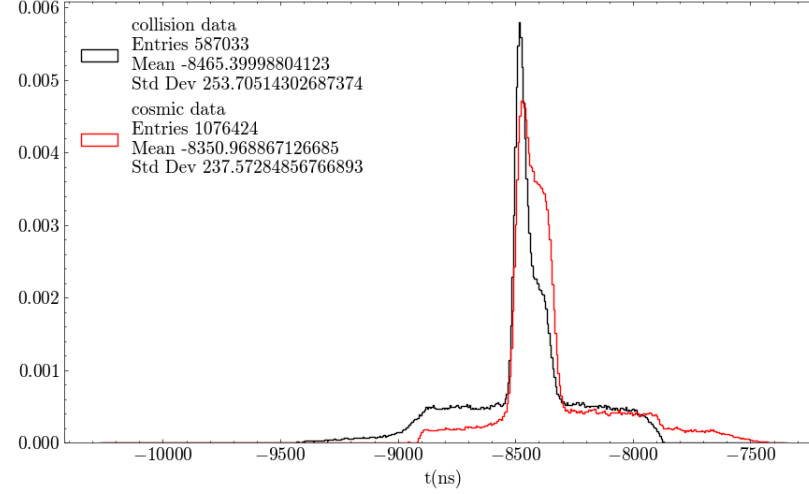
Layer 2 Down



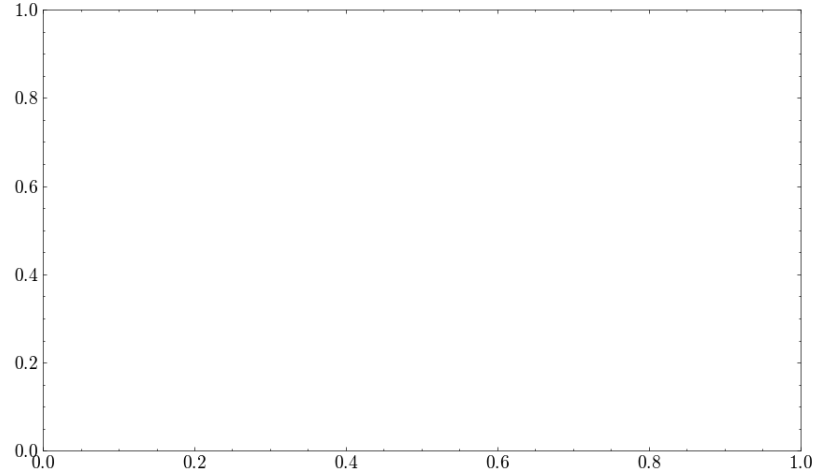
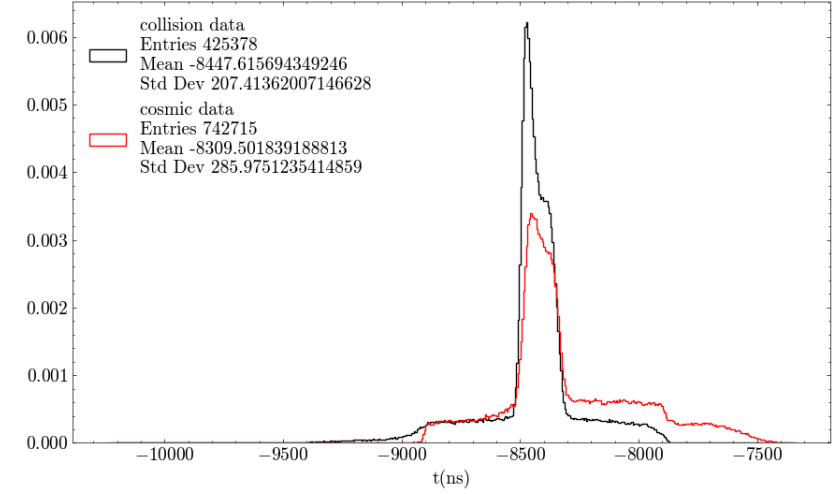
Layer 3 Down



Layer 2 Up

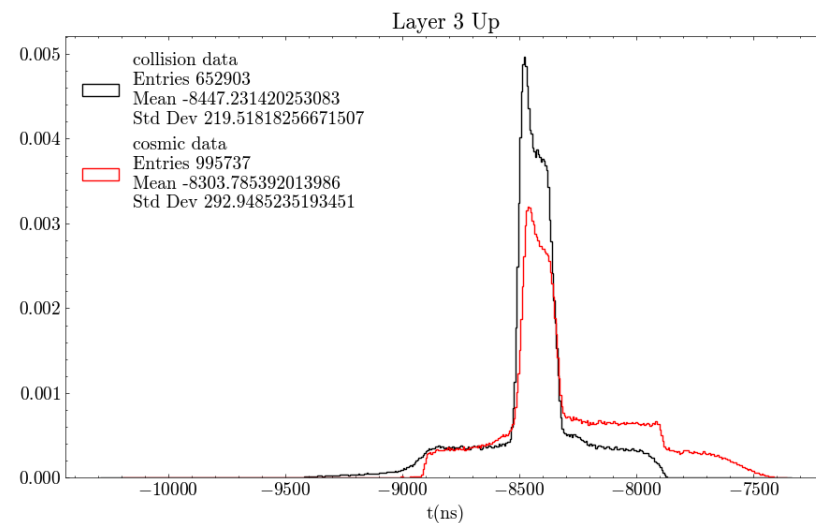
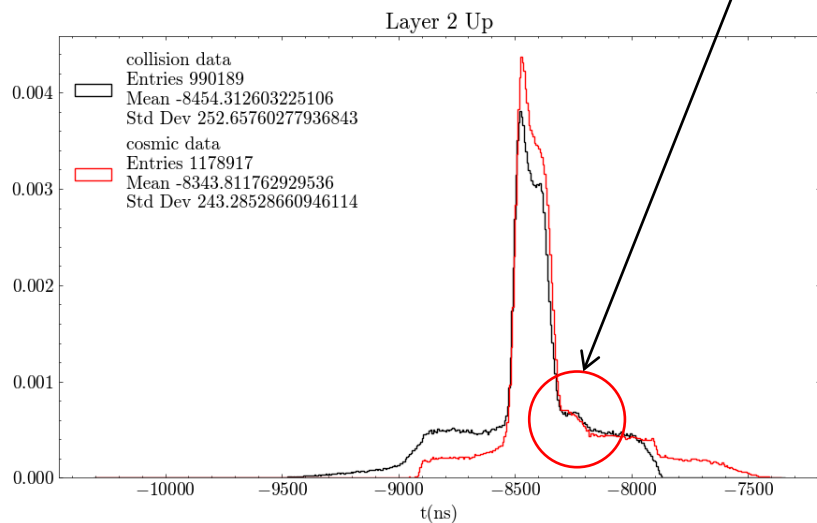
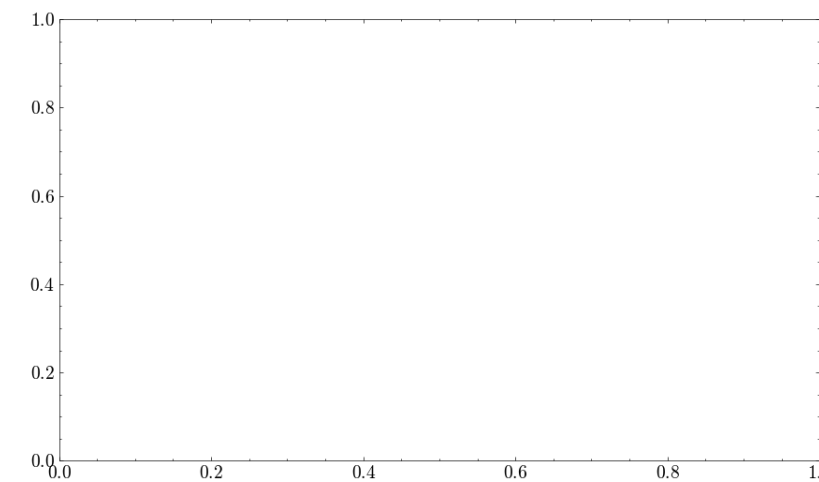
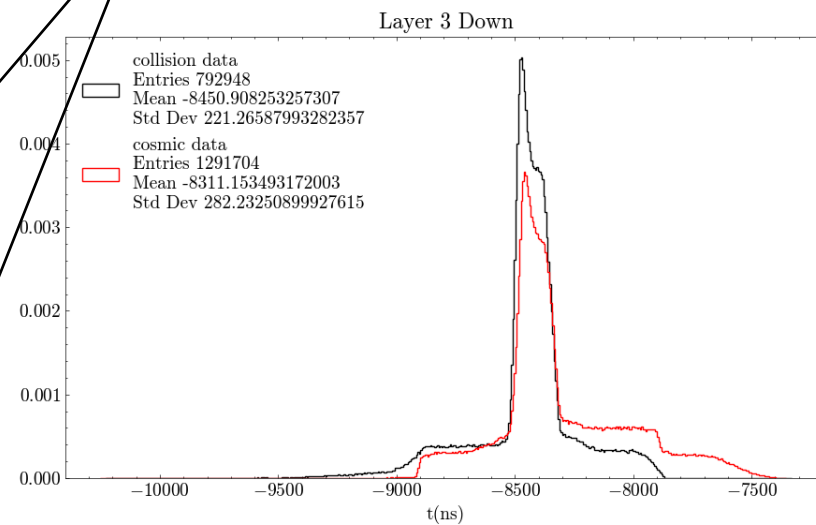
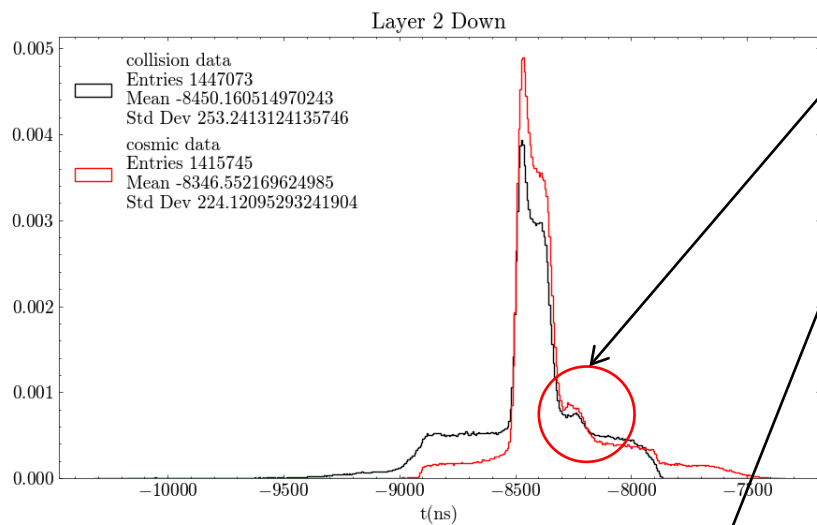
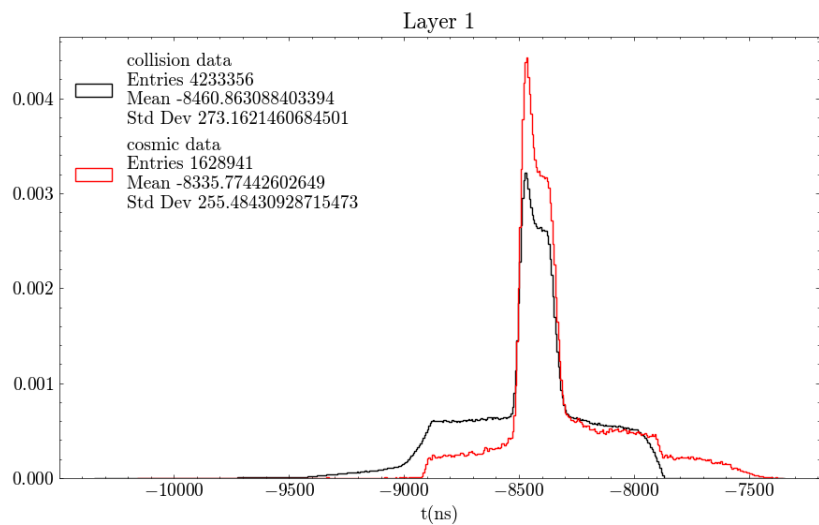


Layer 3 Up

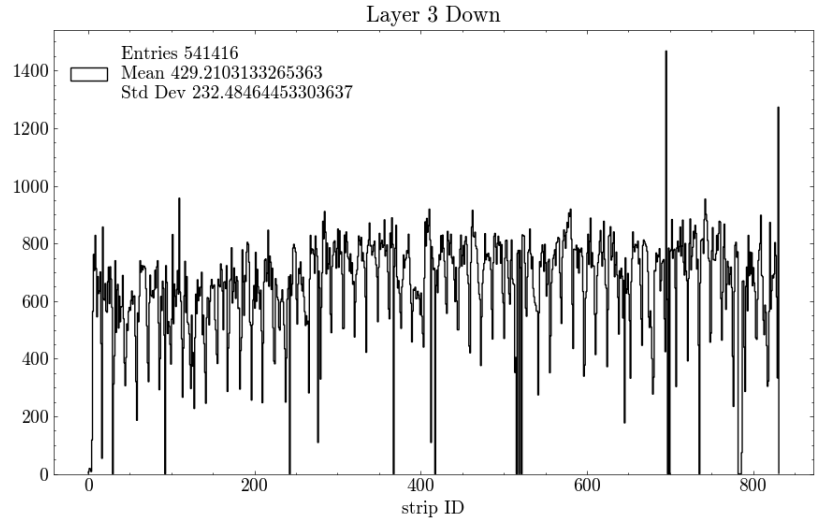
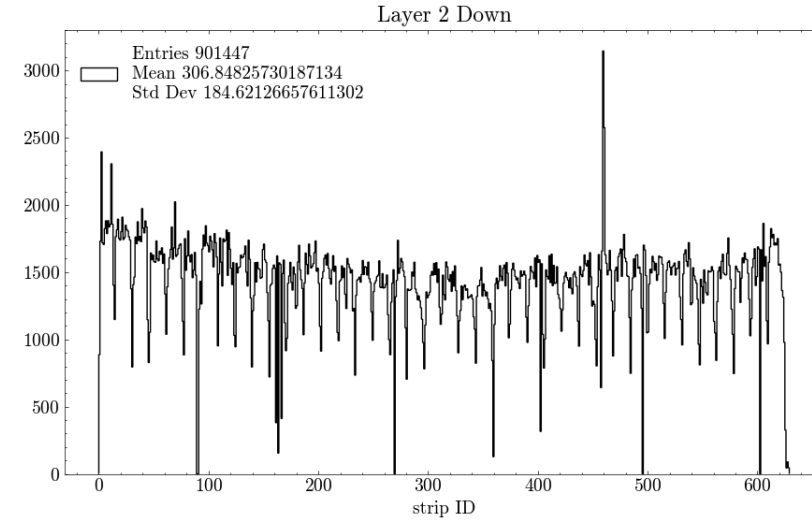
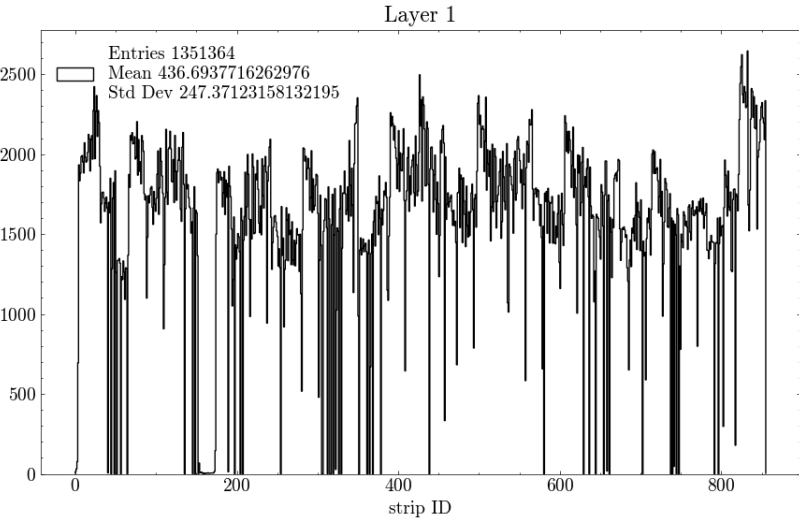
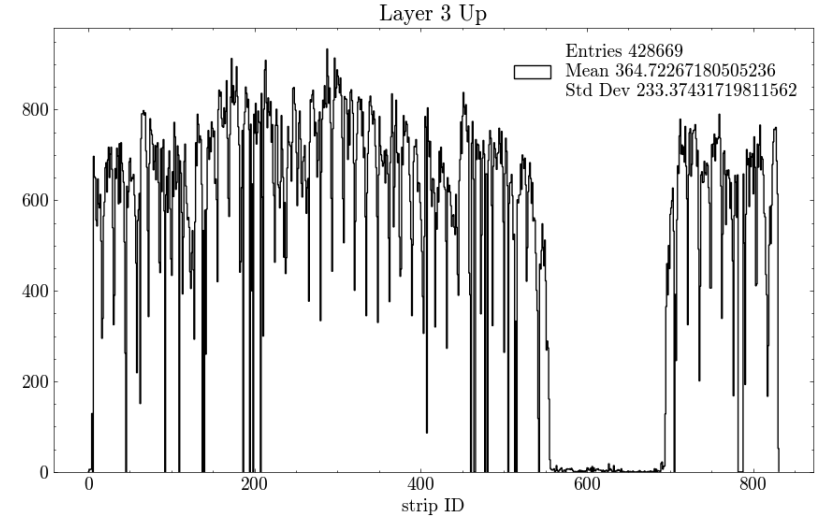
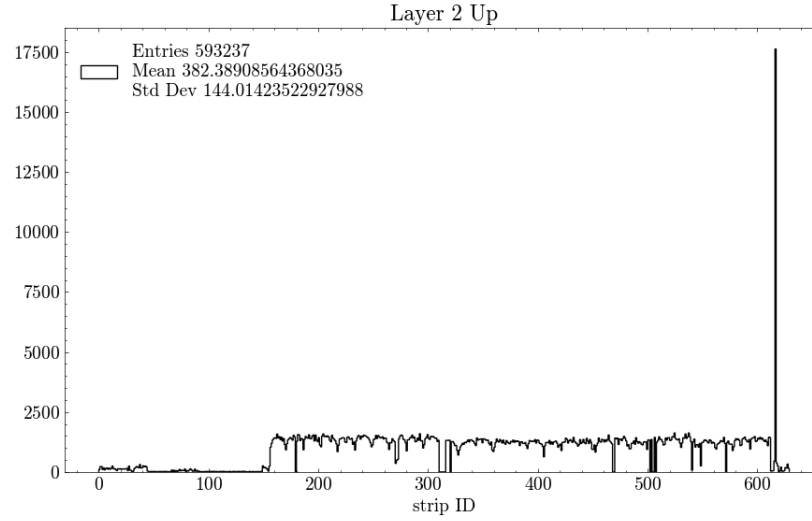
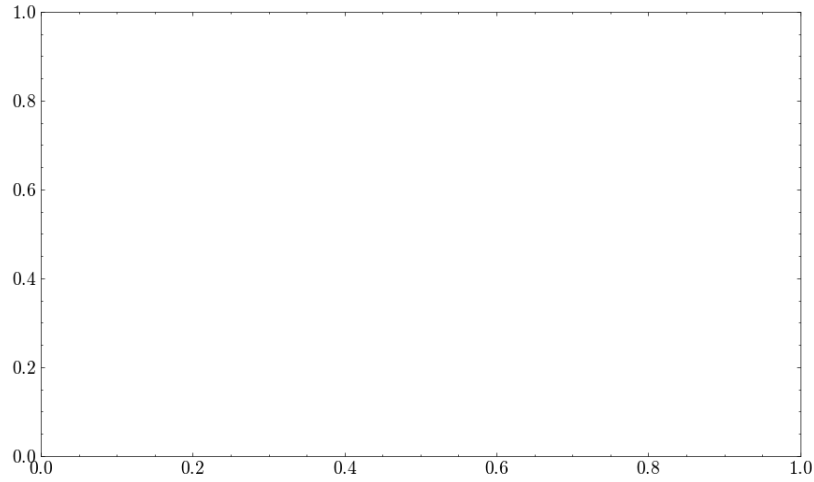


A noticeable bump is observed,
but its cause remains unclear.

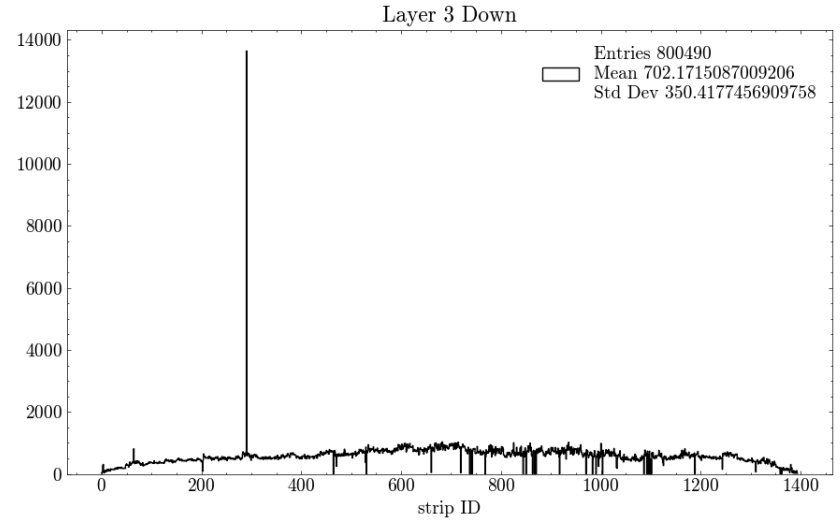
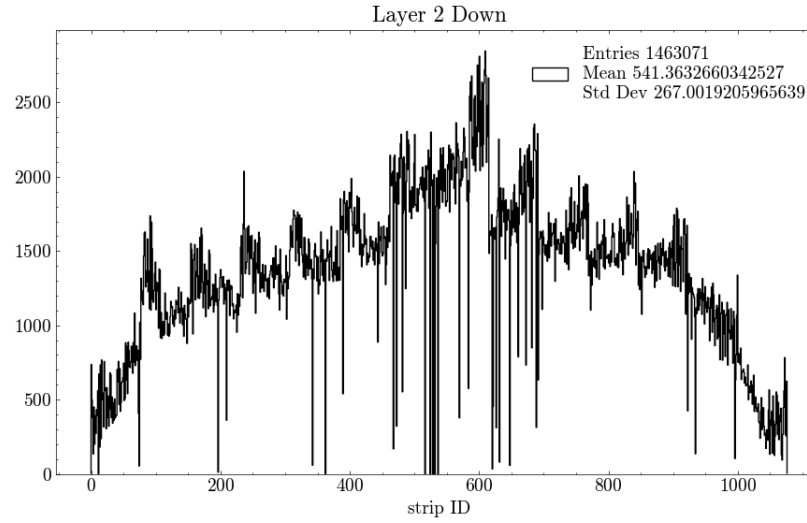
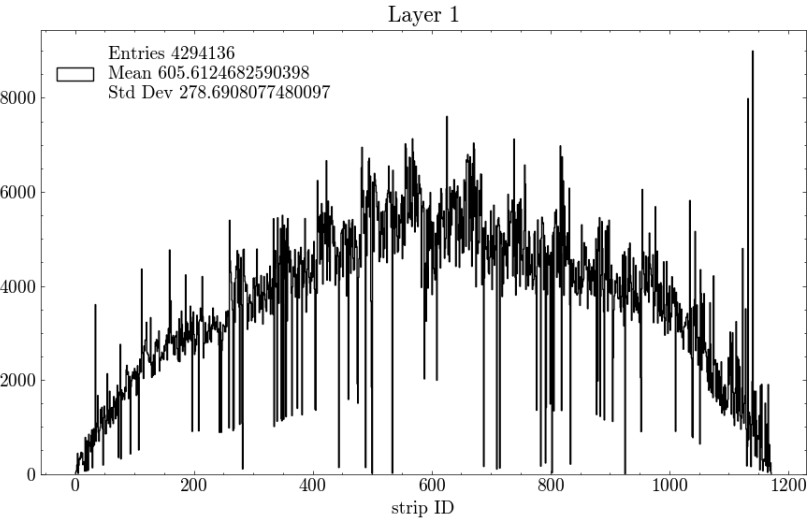
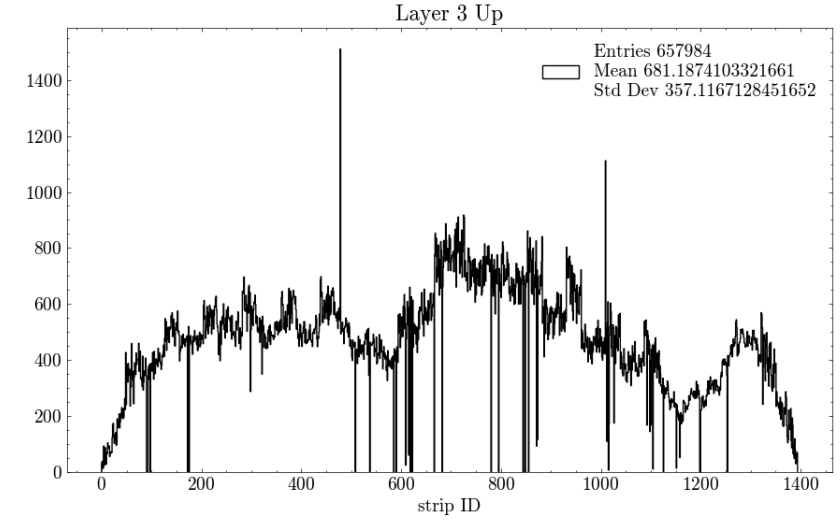
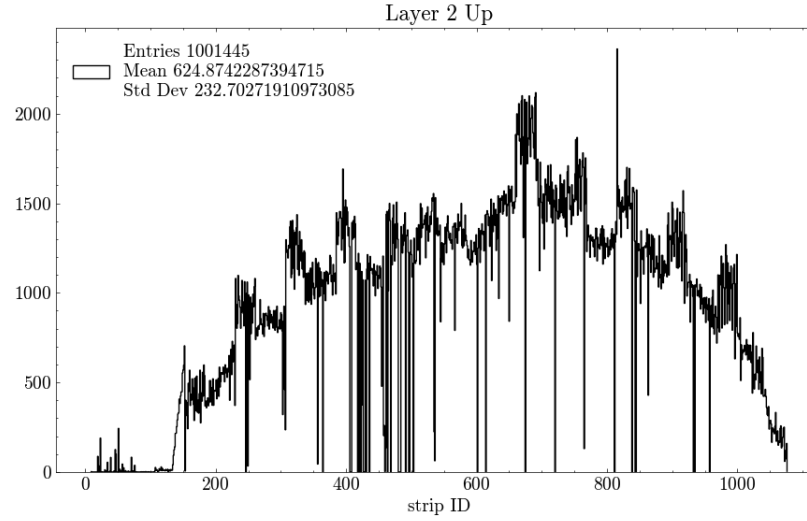
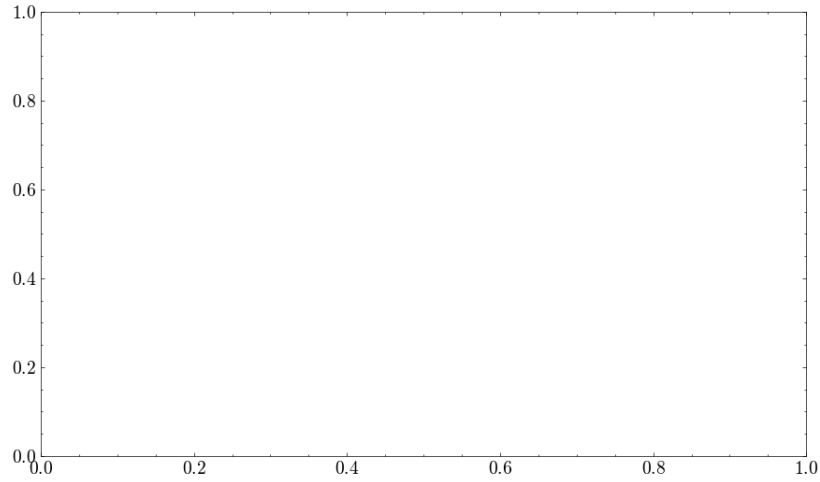
V Distribution of T-est (cosmic run 85191 data vs run'0086044 collision data)



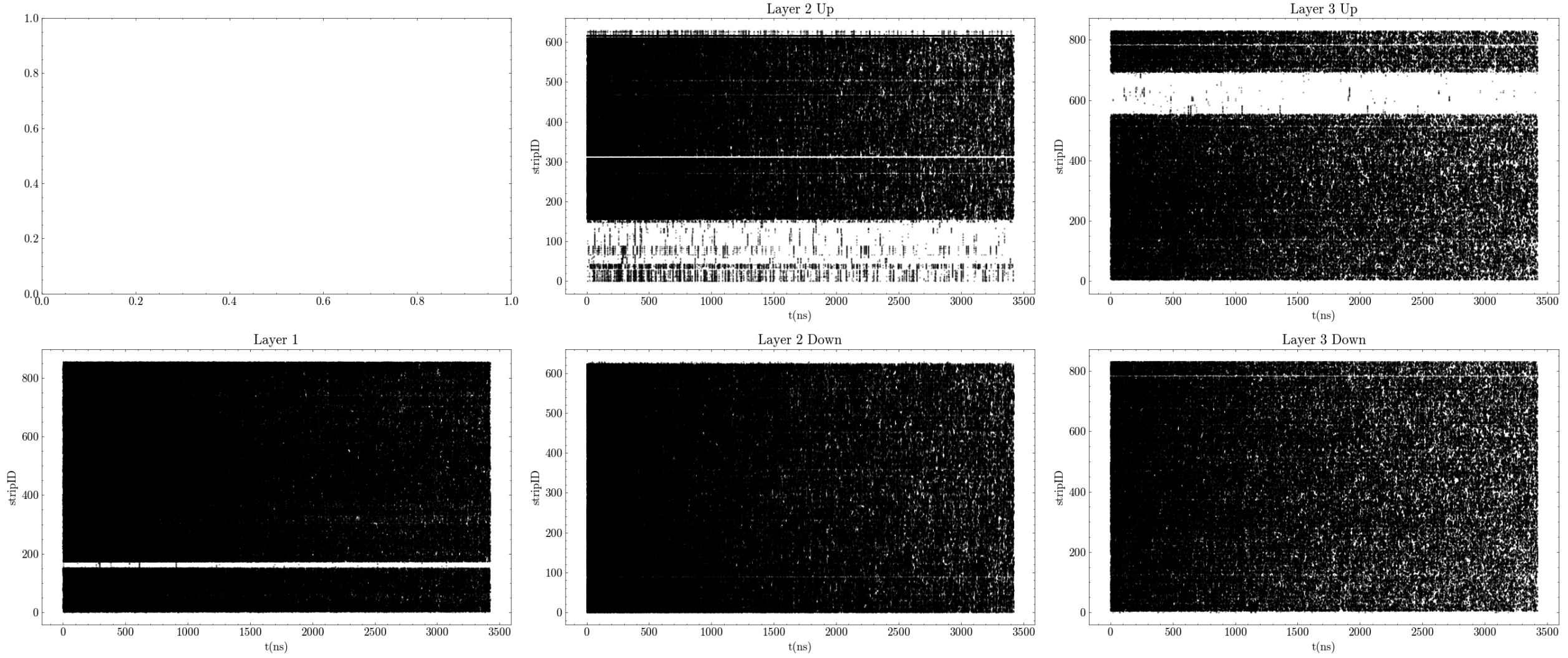
X Distribution of StripID based on run 0086044



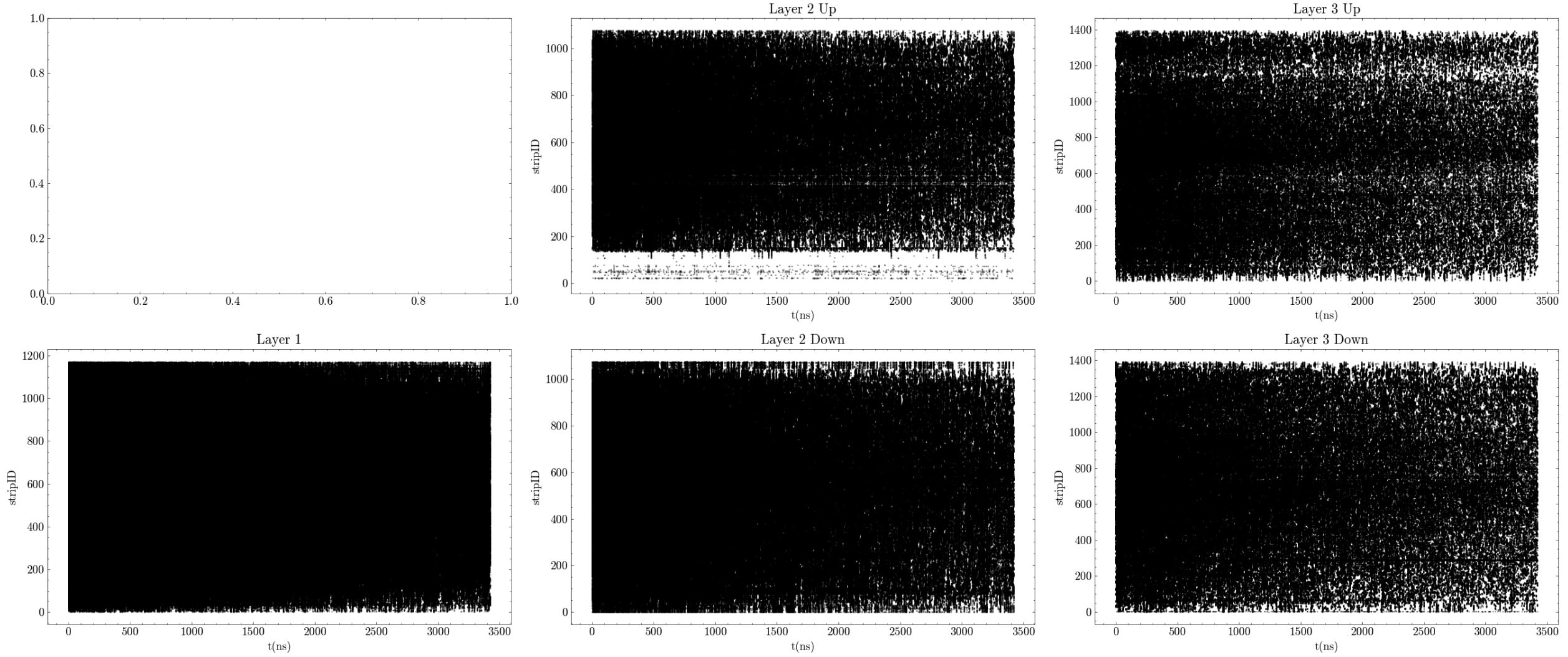
V Distribution of StripID based on run 0086044



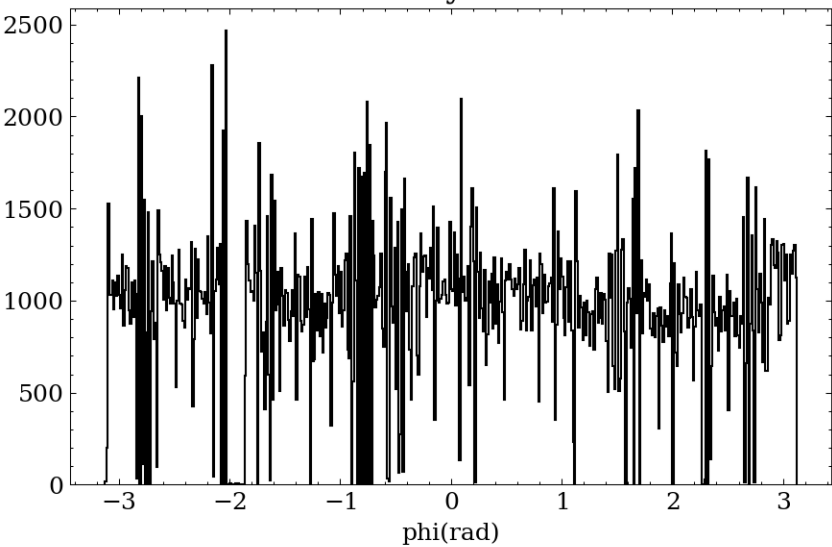
X Distribution of event time stamp vs stripID based on run'0086044 collision data)



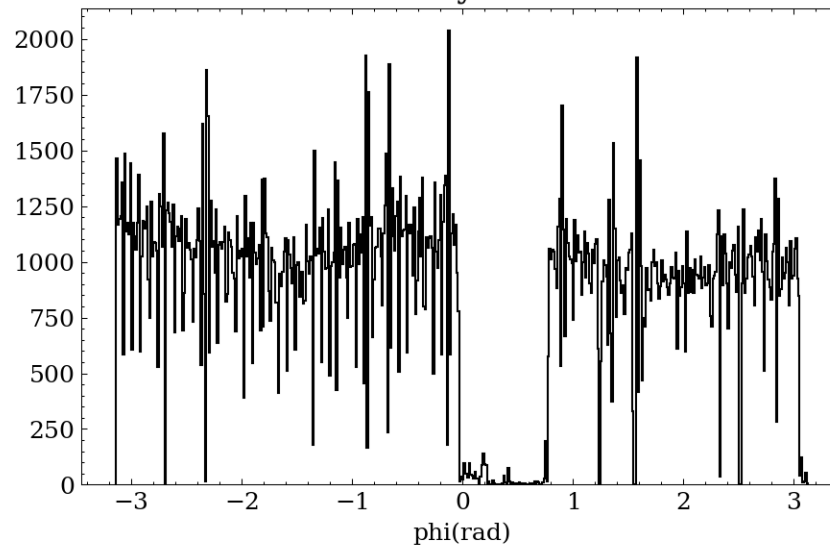
V Distribution of event time stamp vs stripID based on run'0086044 collision data)



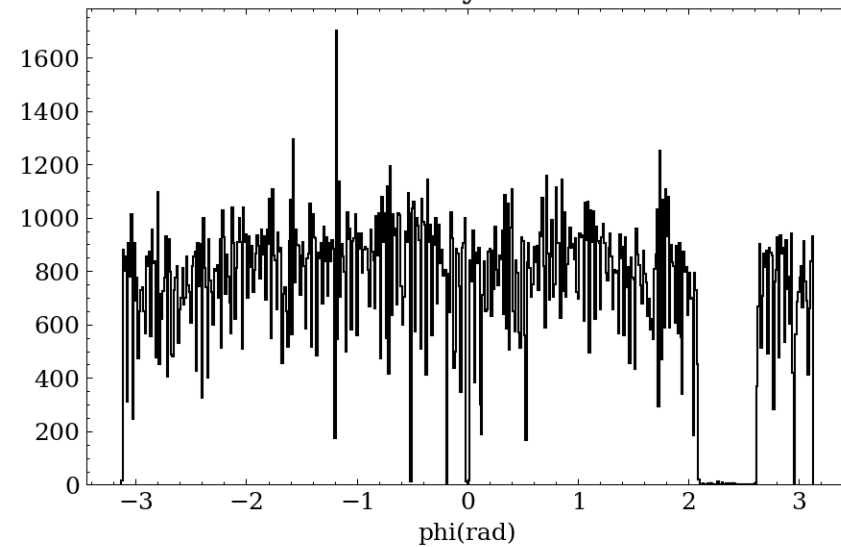
X Layer 1



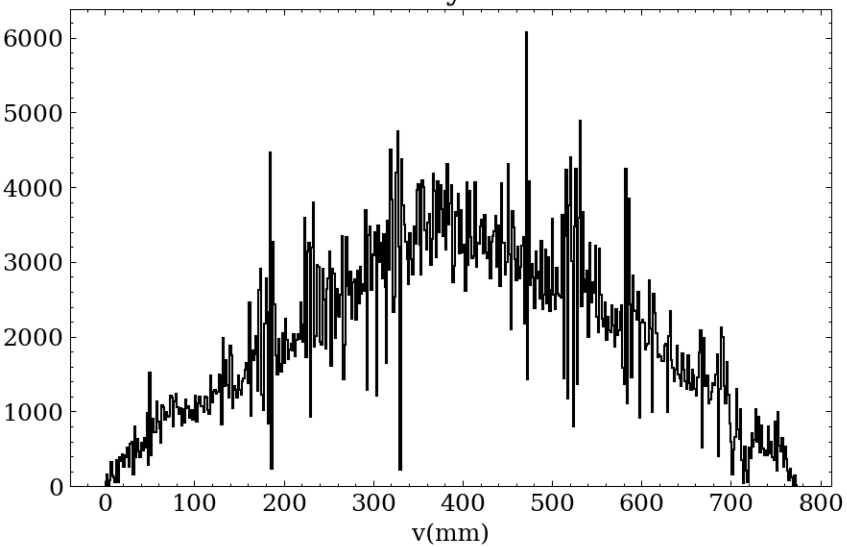
CC fit result
X Layer 2



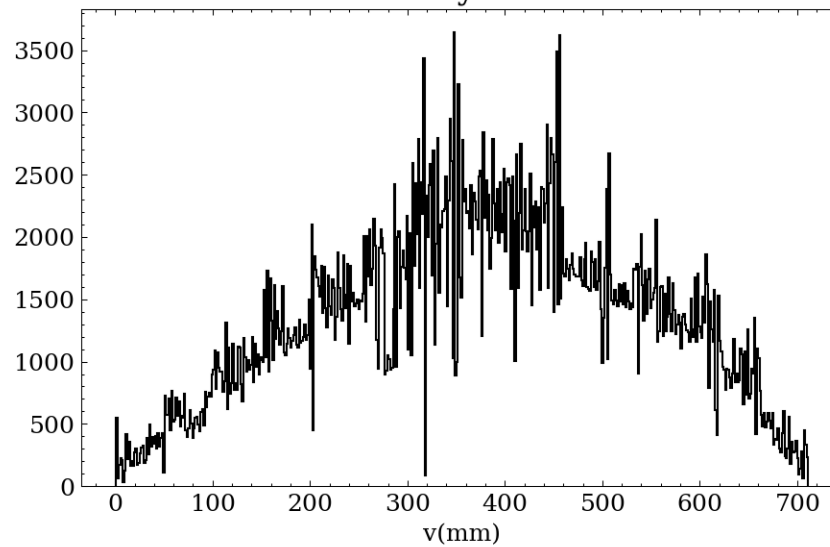
X Layer 3



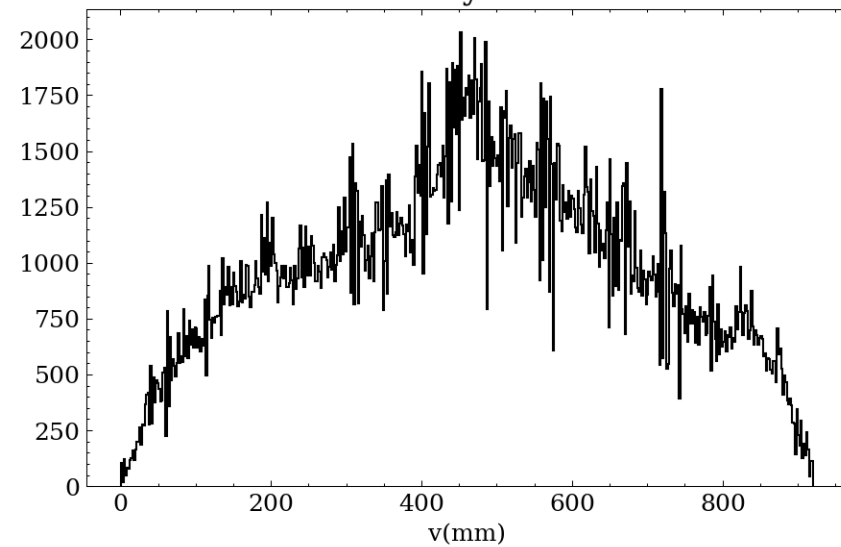
V Layer 1



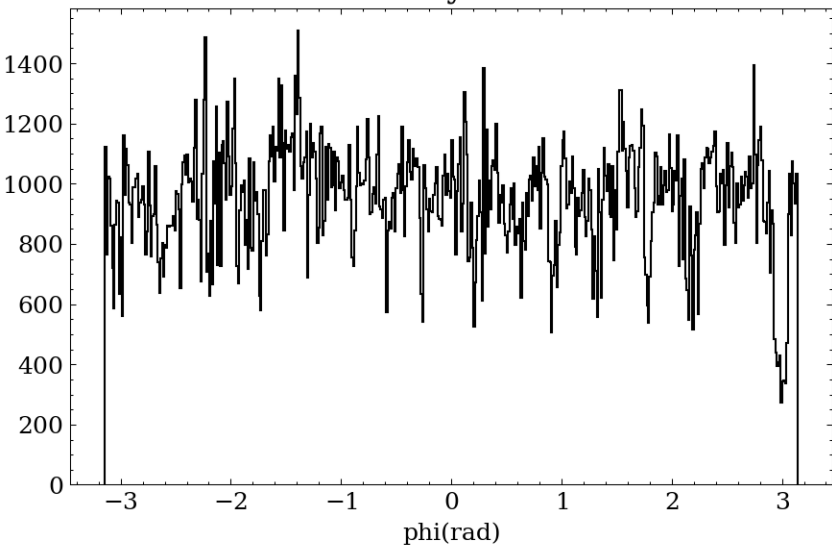
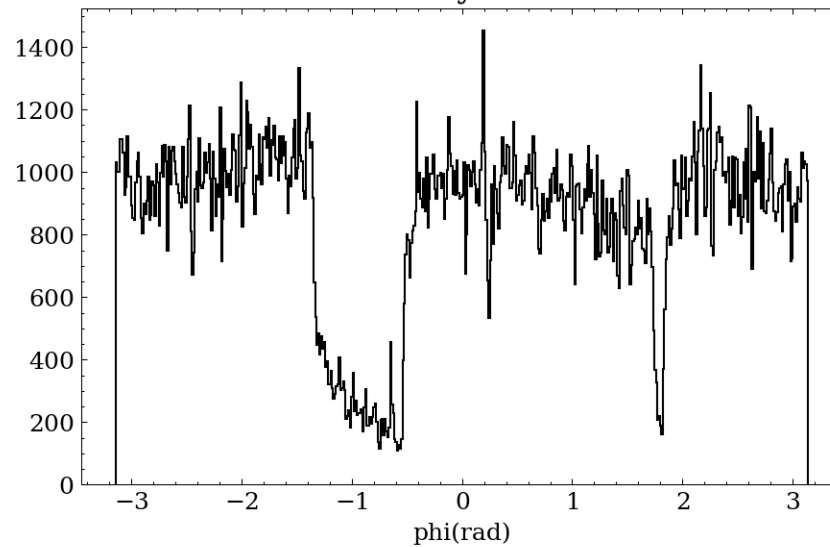
V Layer 2



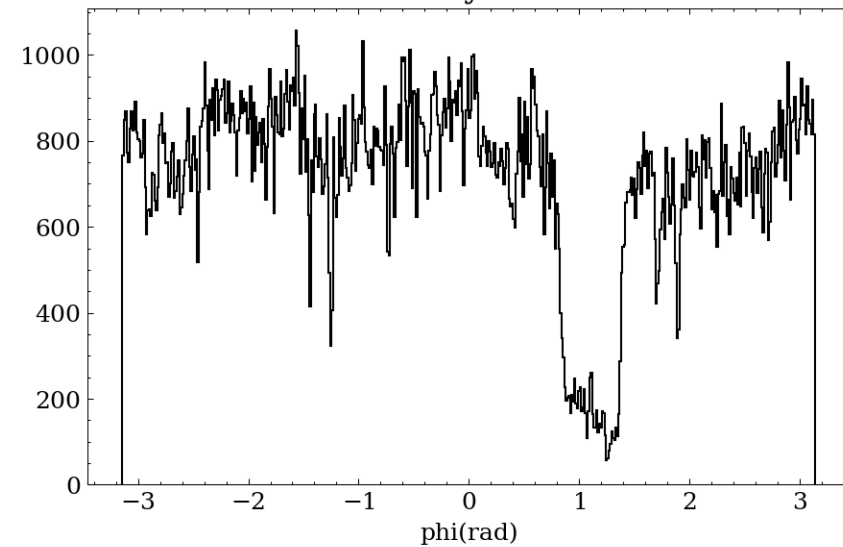
V Layer 3



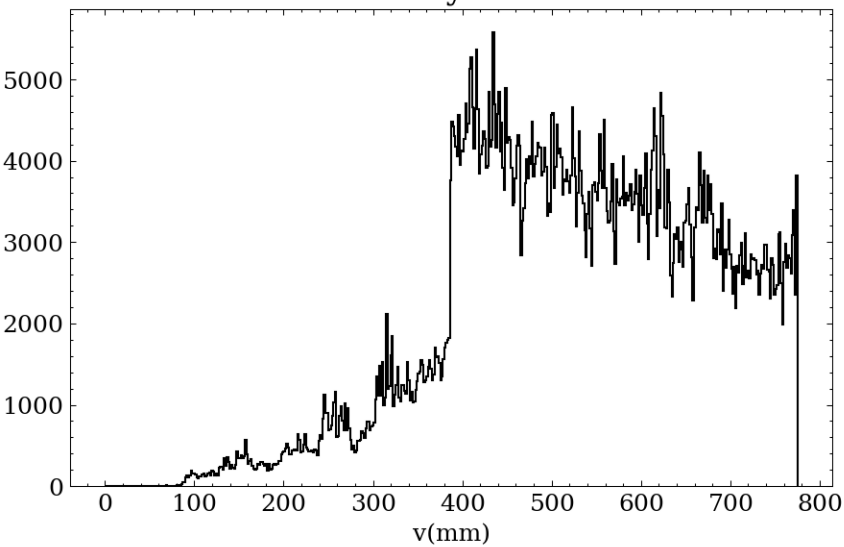
X Layer 1

mTPC fit result
X Layer 2

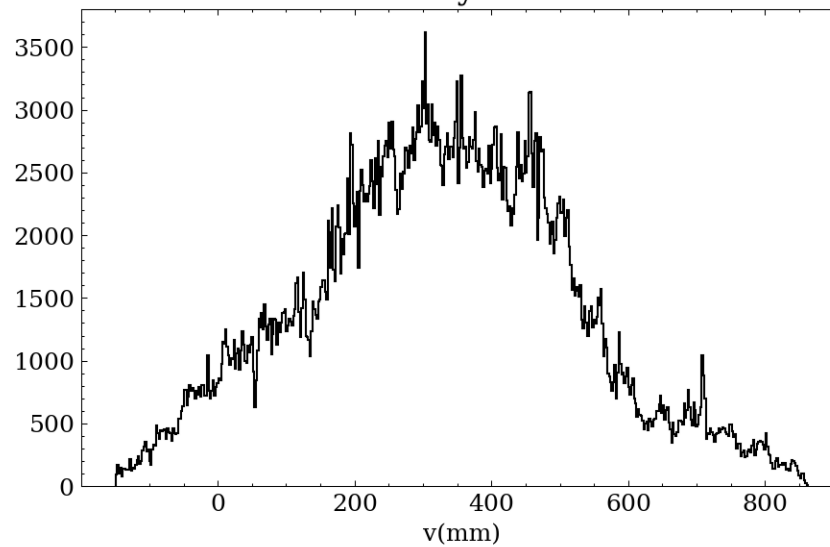
X Layer 3



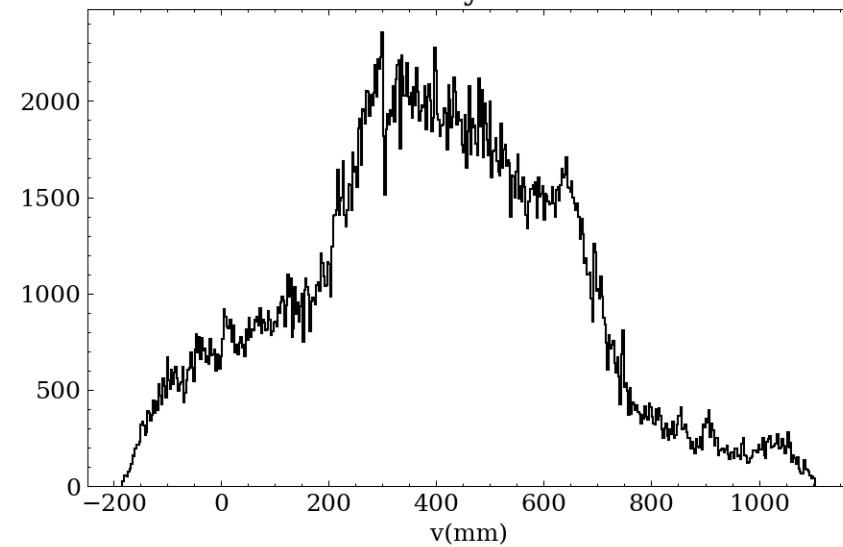
V Layer 1

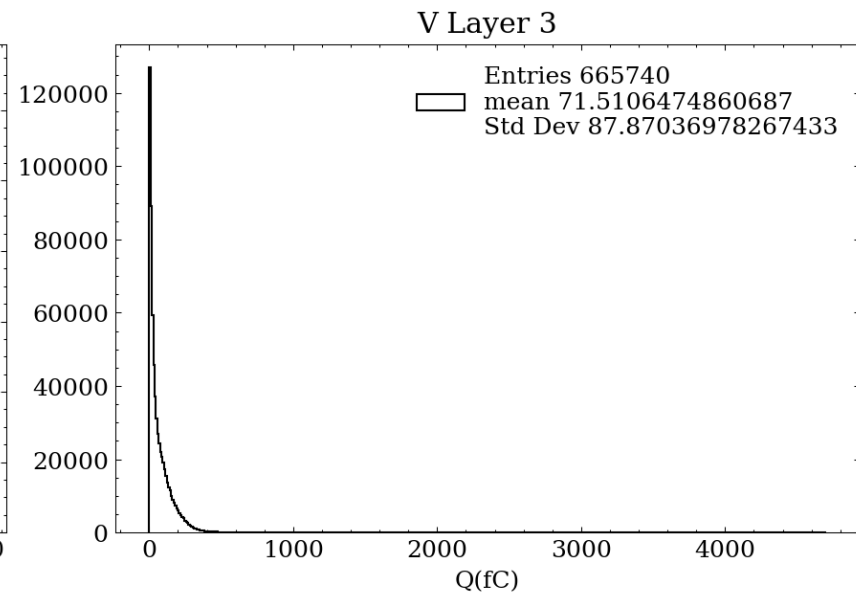
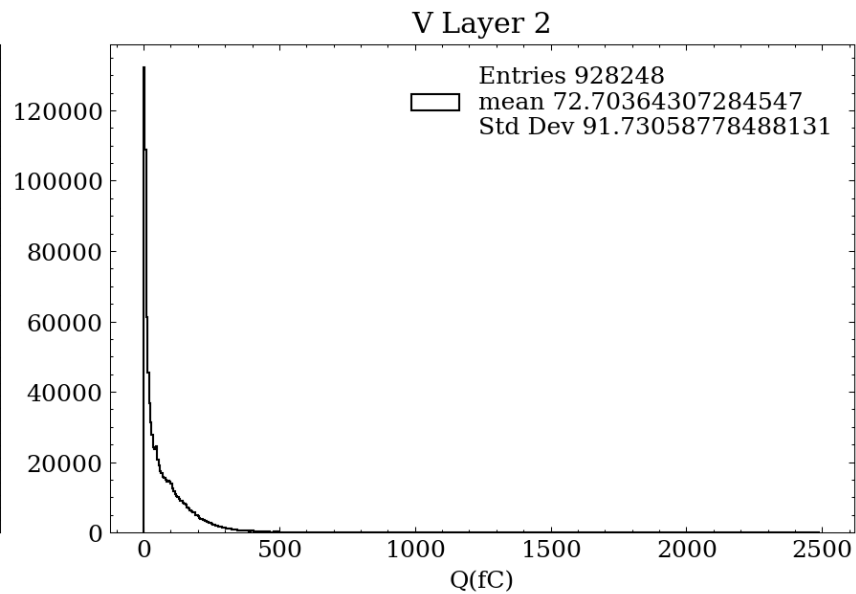
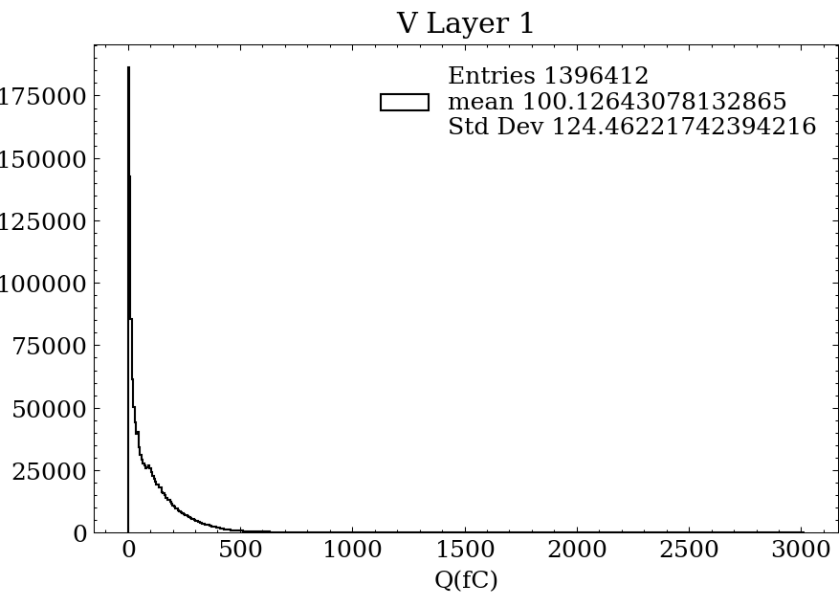
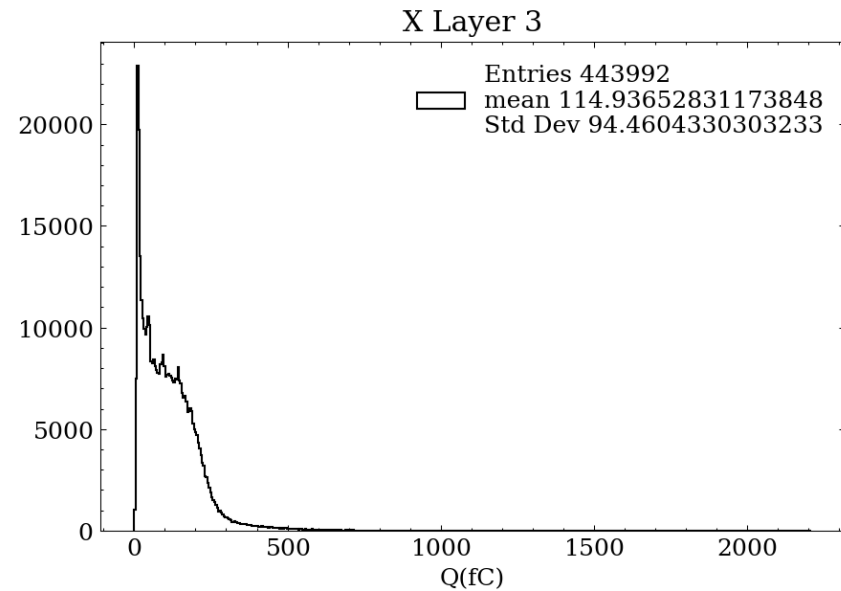
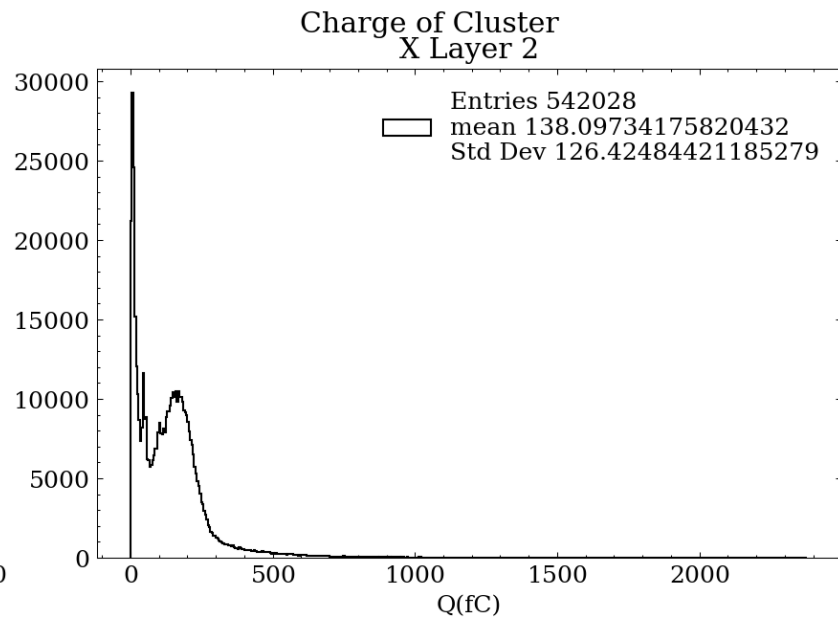
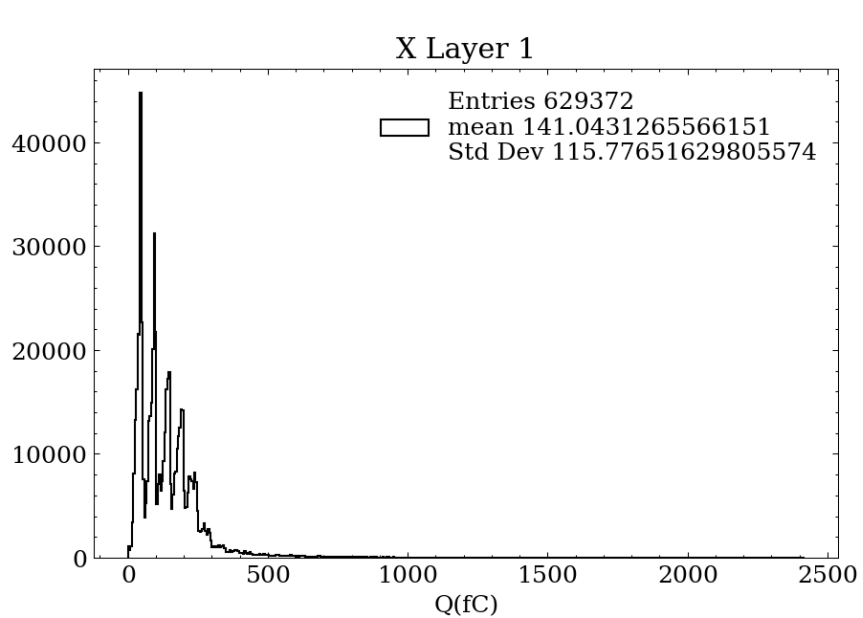


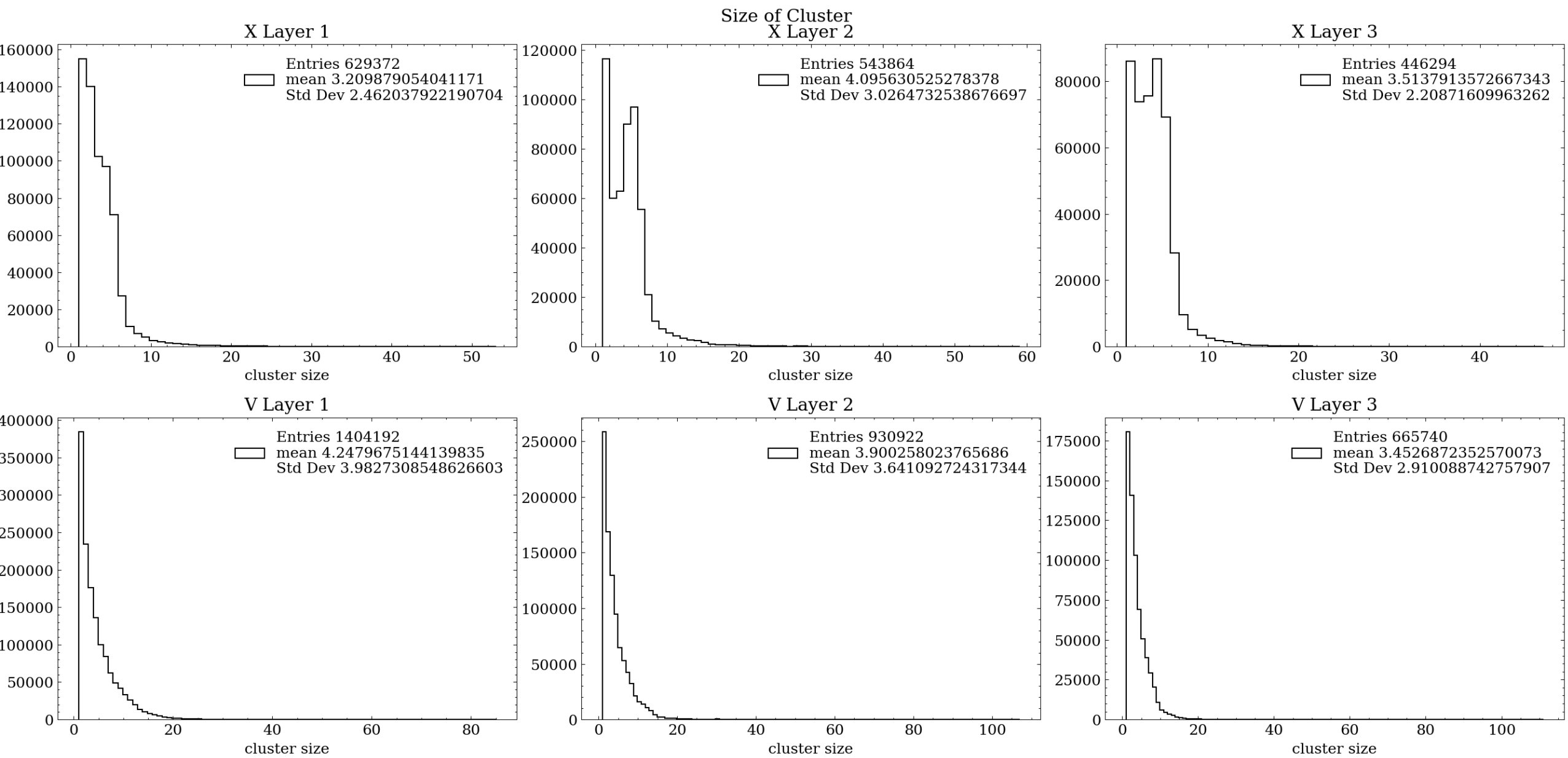
V Layer 2

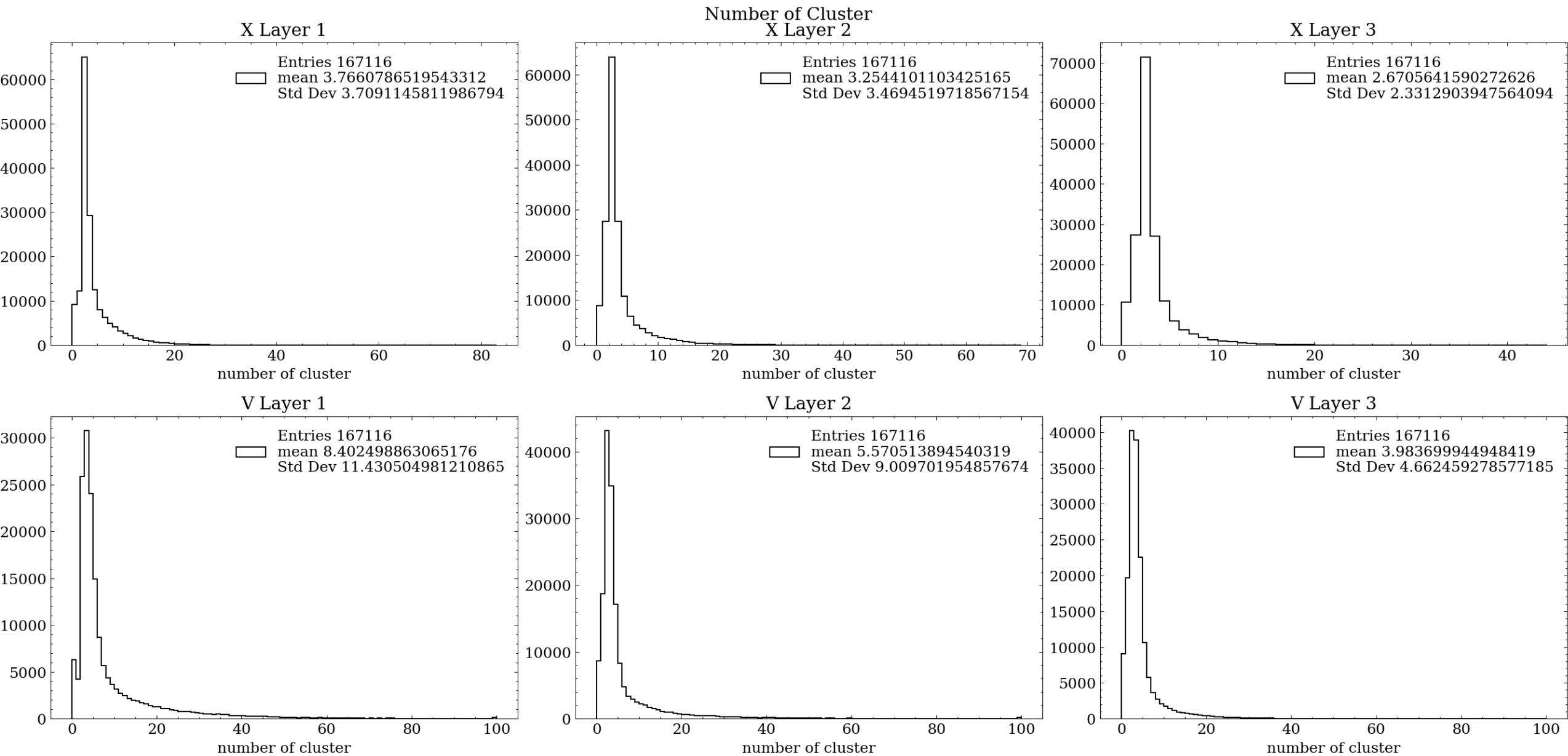


V Layer 3



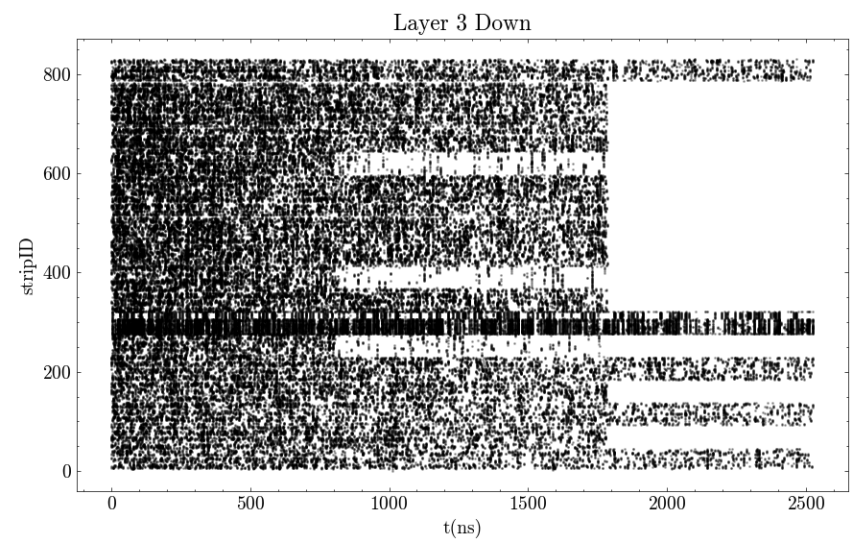
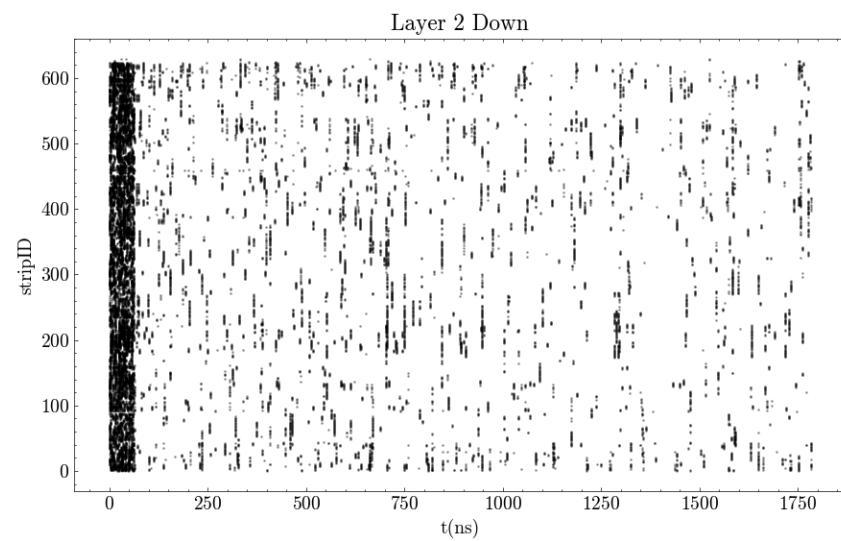
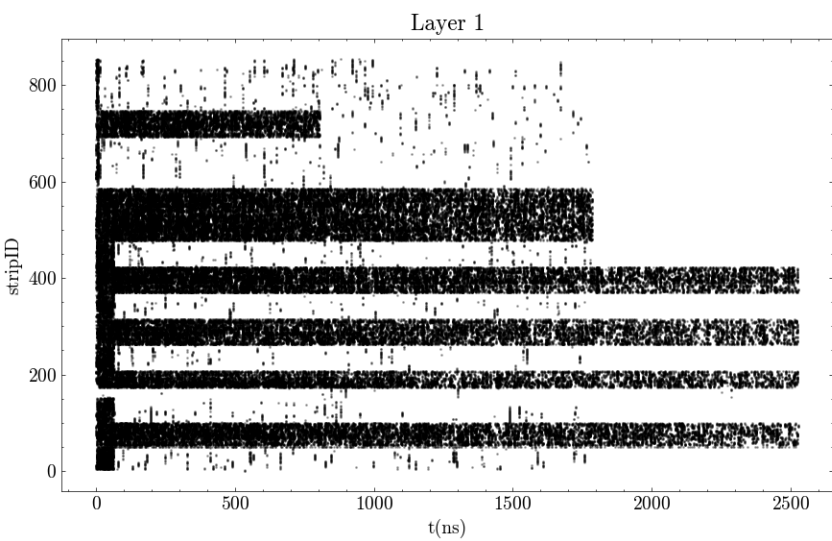
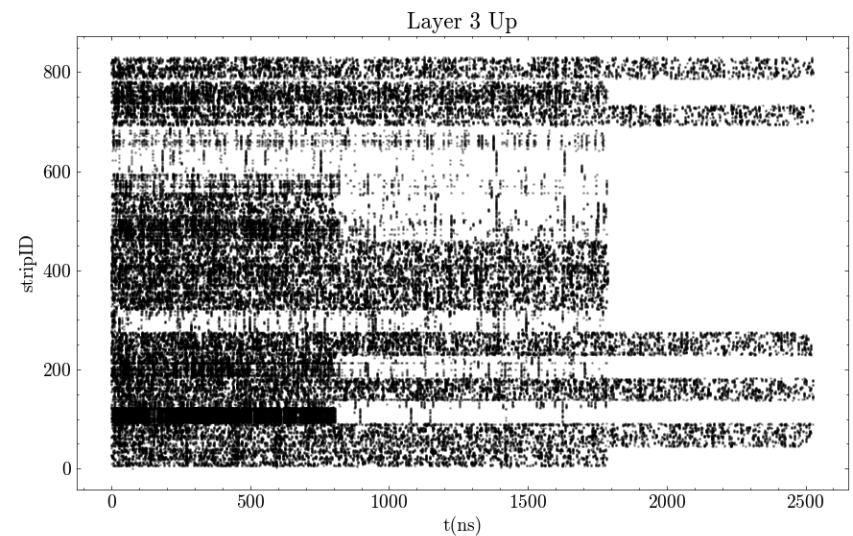
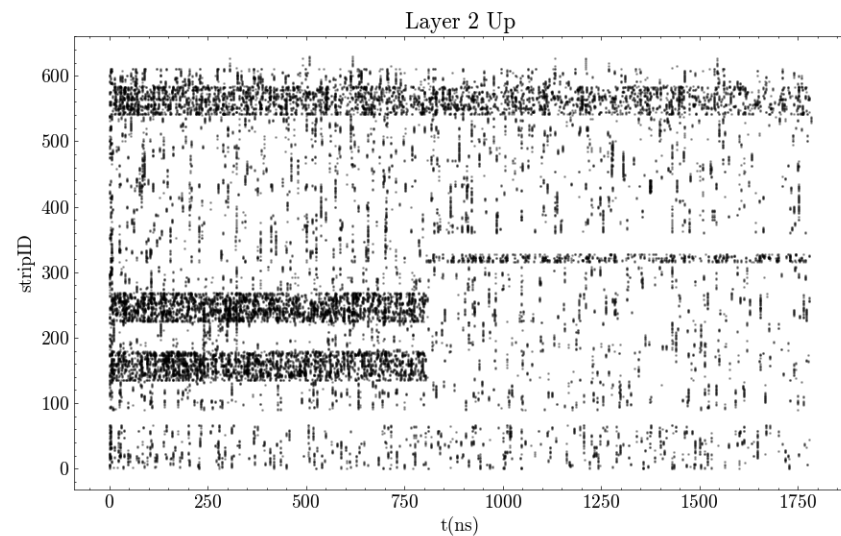
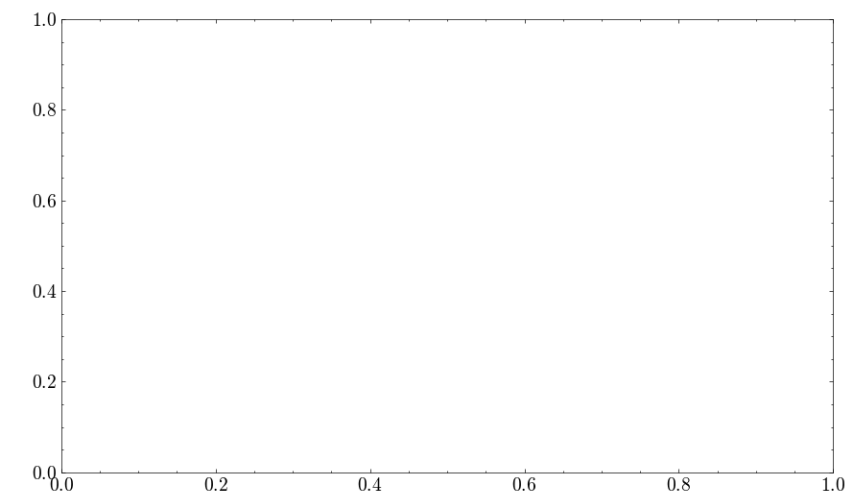




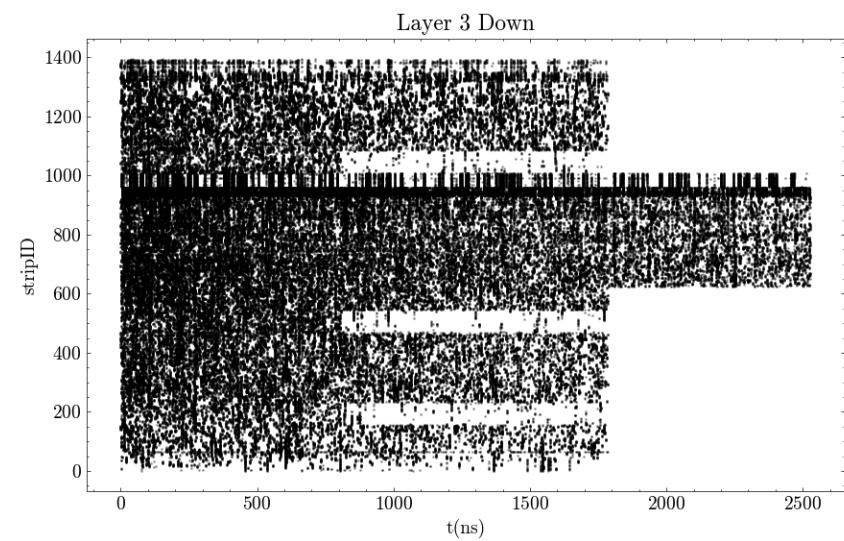
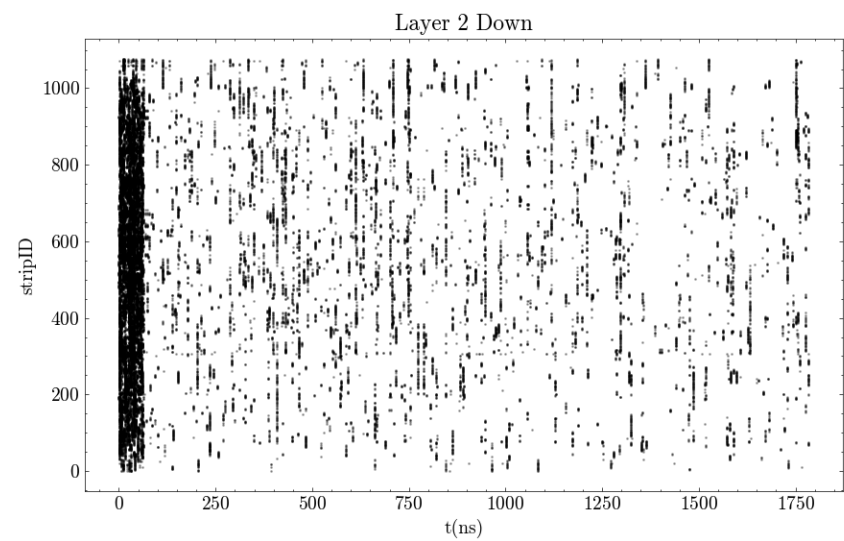
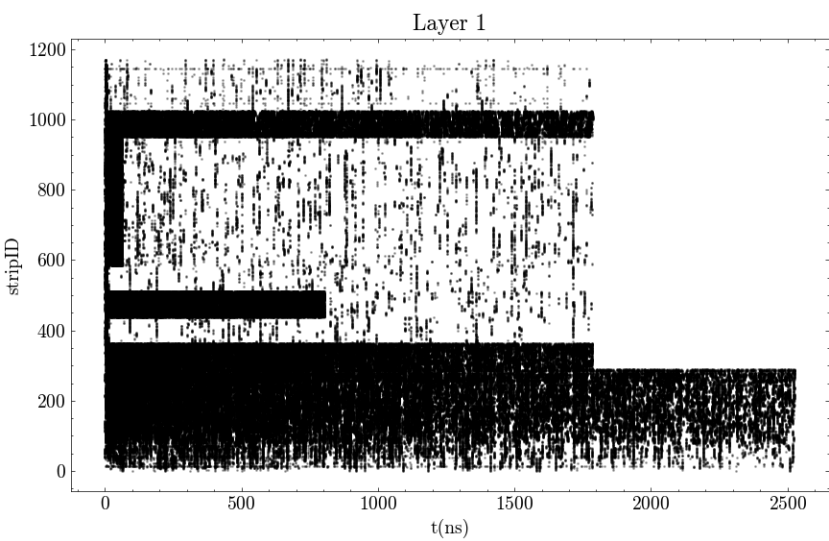
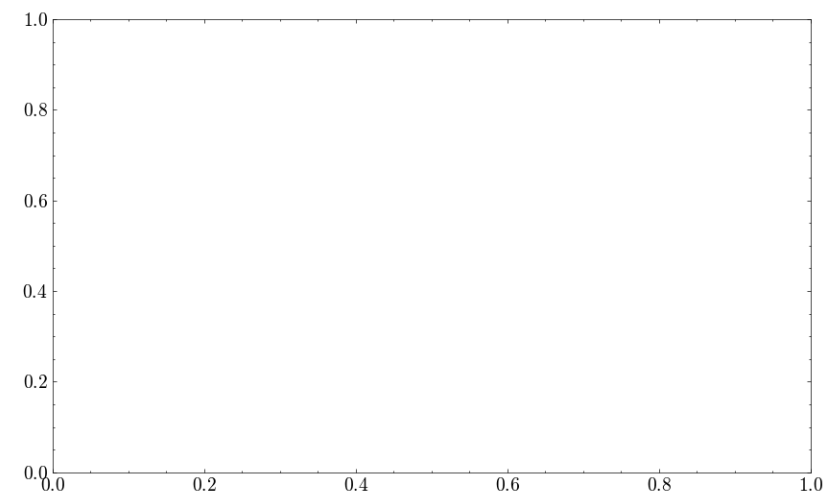
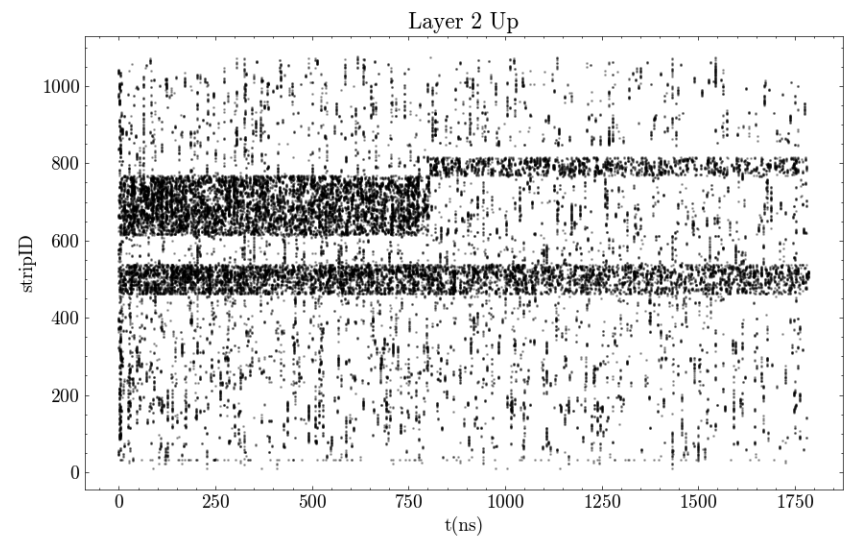
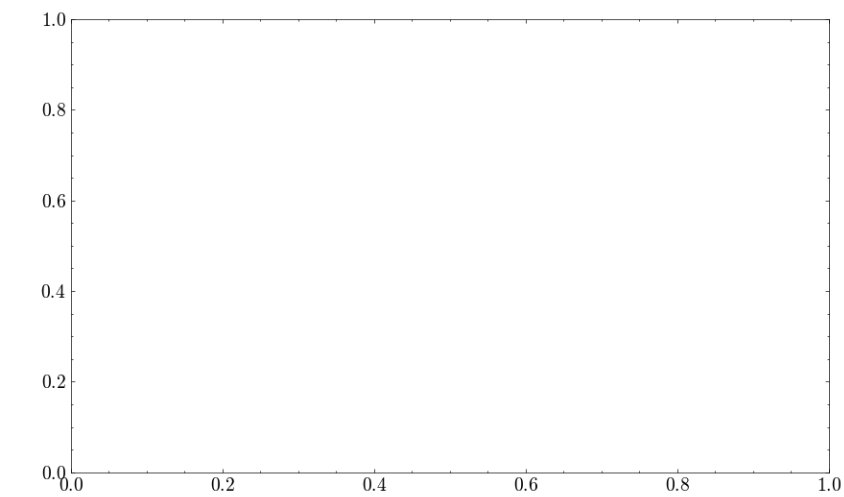


Backup

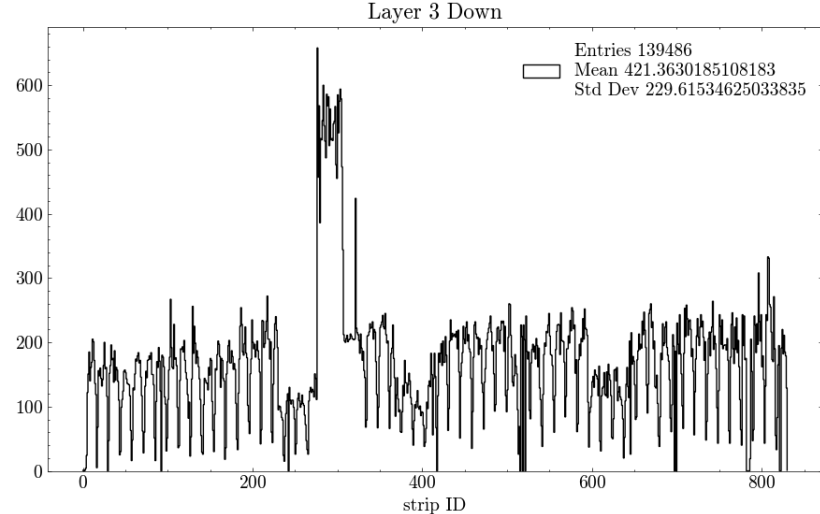
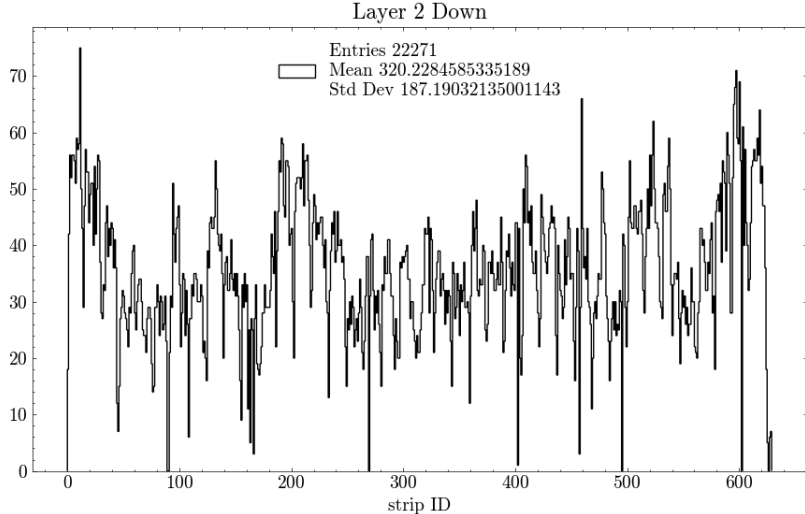
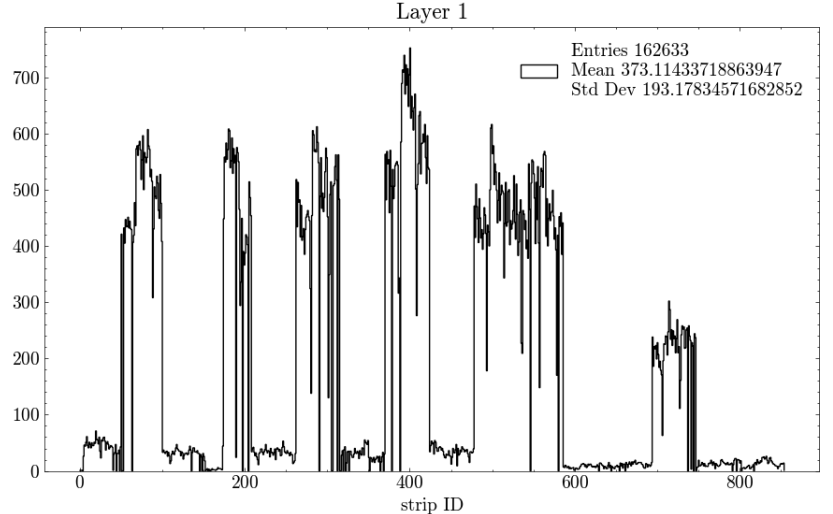
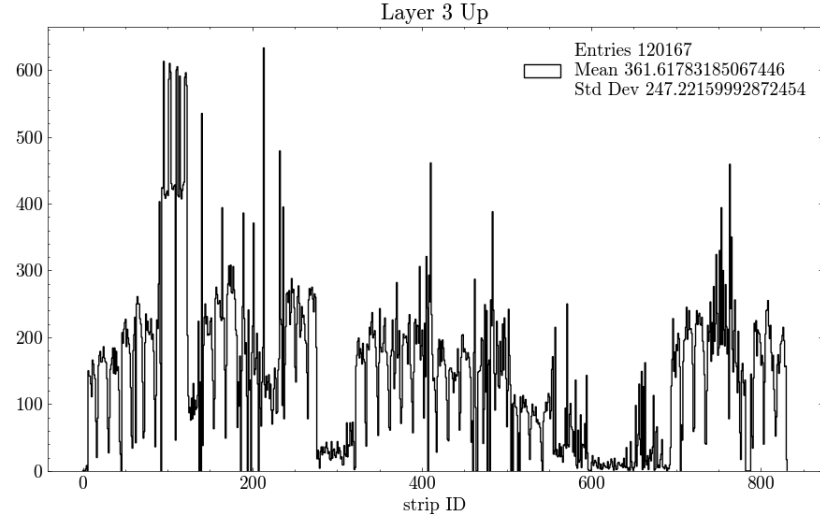
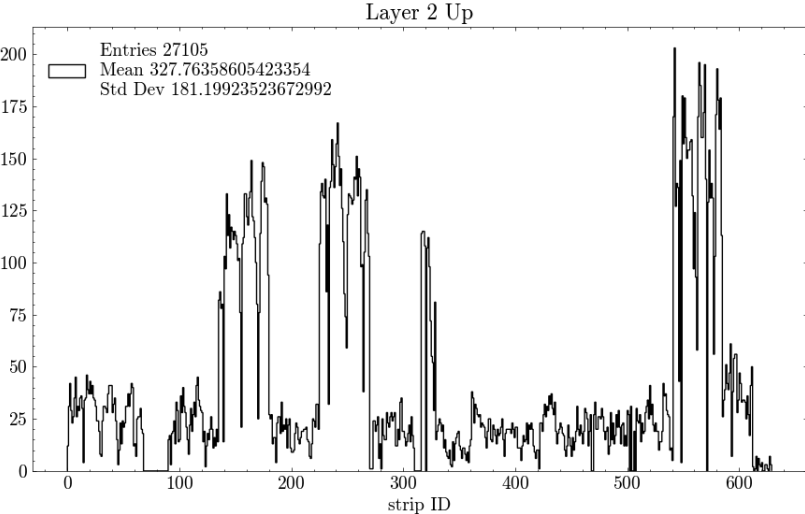
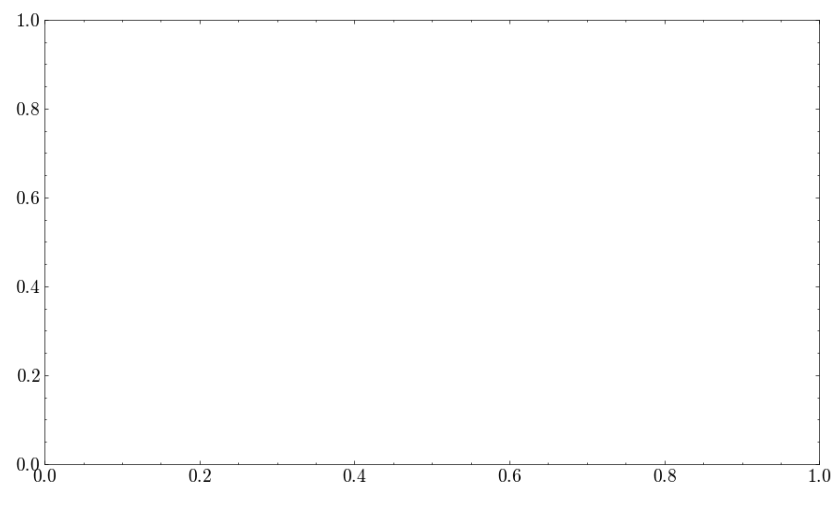
X Distribution of event time stamp vs stripID based on run'0085756 collision data)



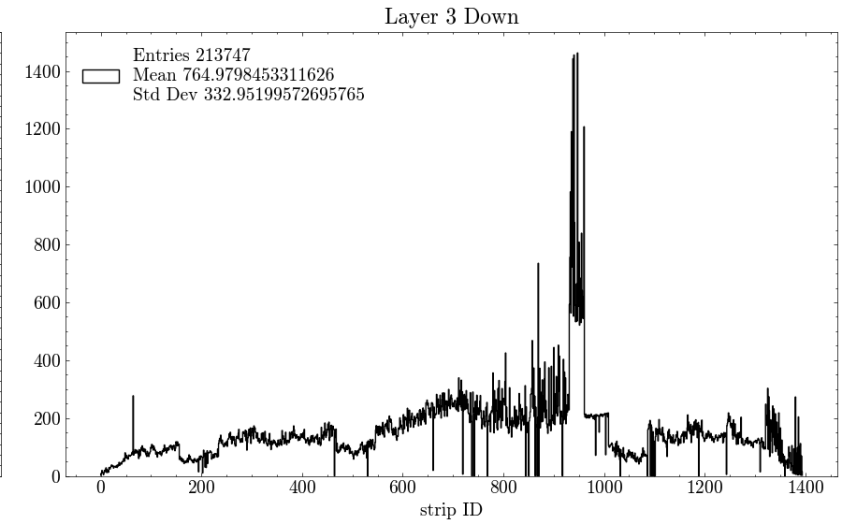
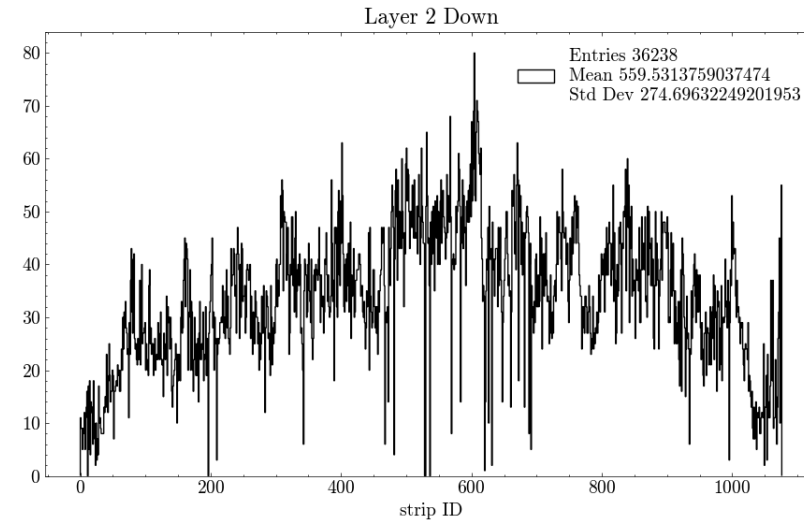
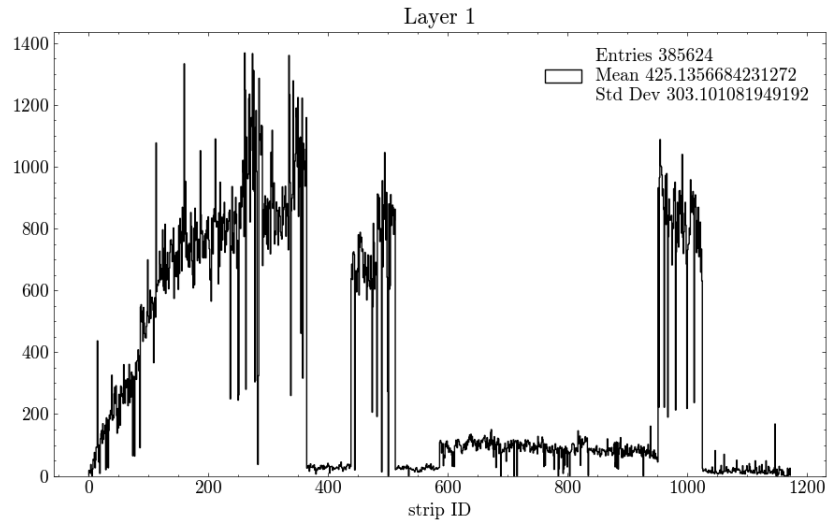
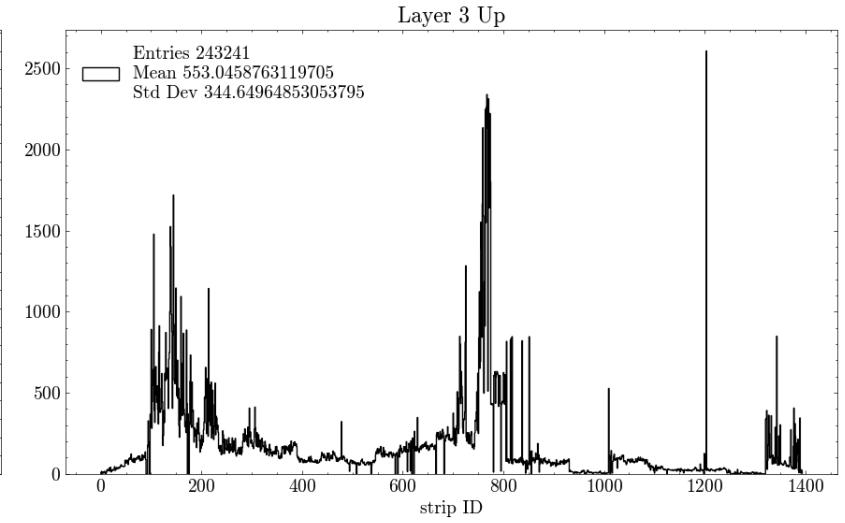
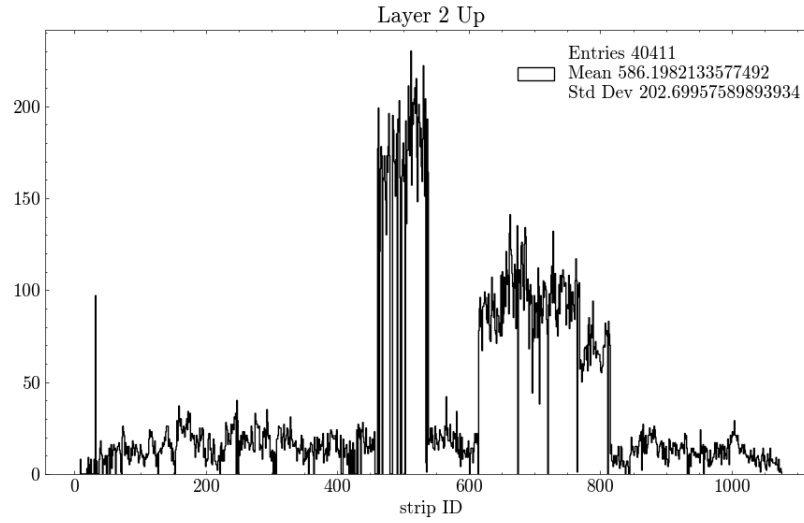
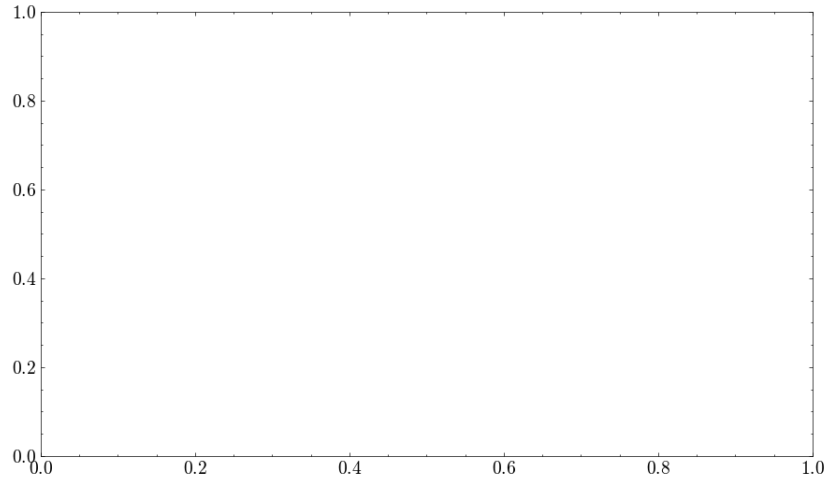
V Distribution of event time stamp vs stripID based on run'0085756 collision data)



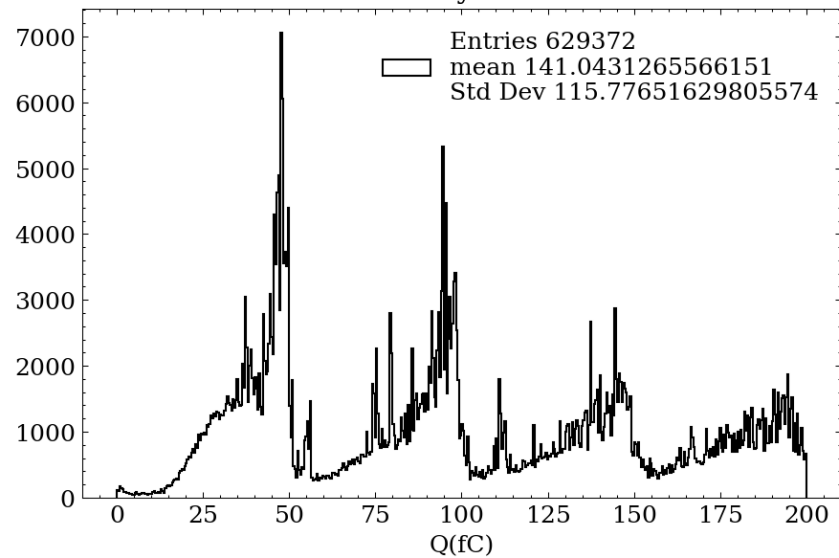
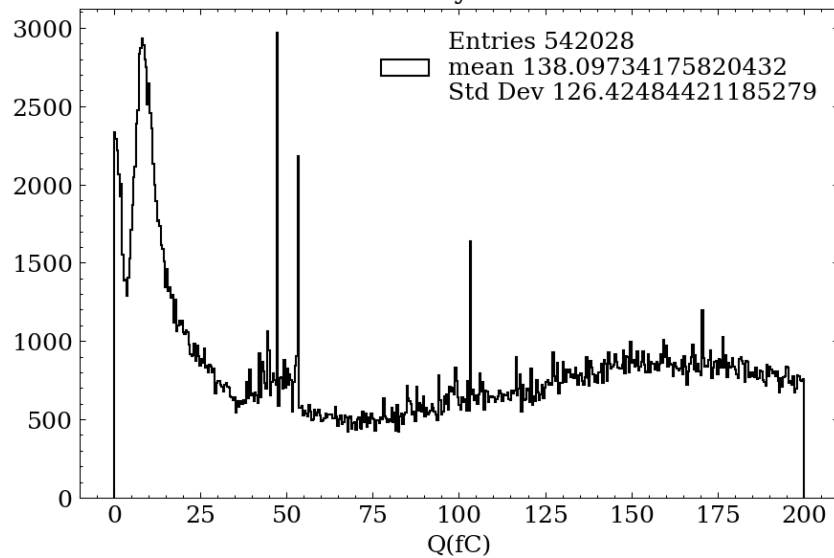
X Distribution of StripID based on run 0085756



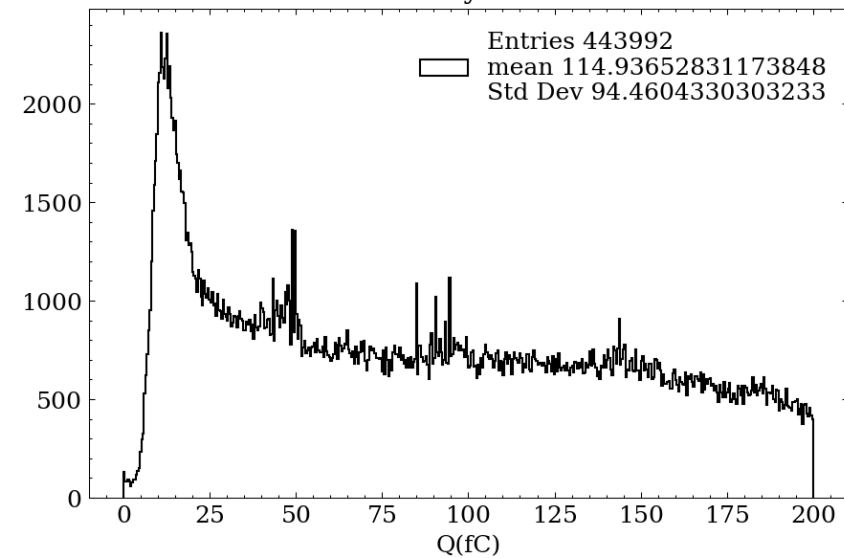
V Distribution of StripID based on run 0085756



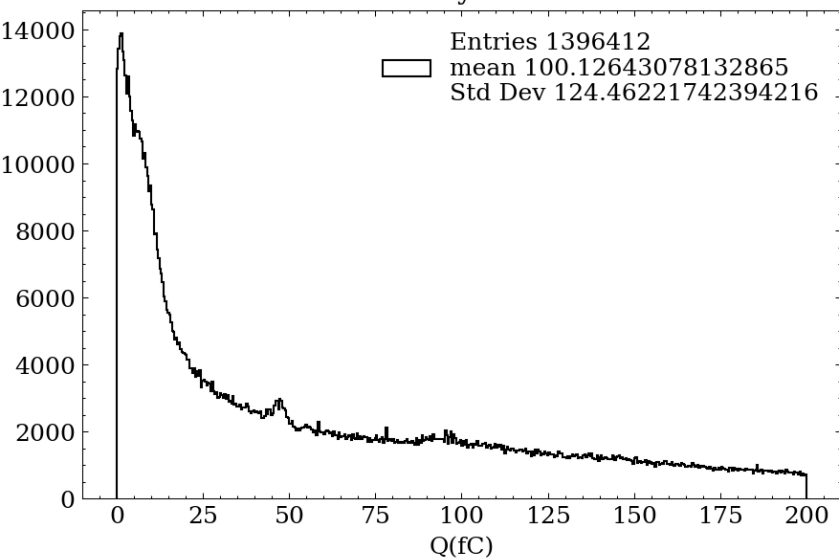
X Layer 1

Charge of Cluster
X Layer 2

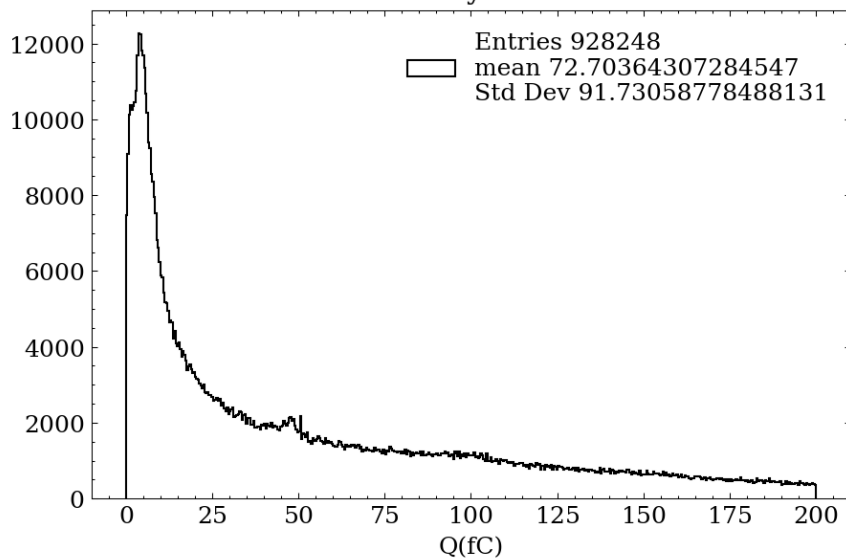
X Layer 3



V Layer 1



V Layer 2



V Layer 3

