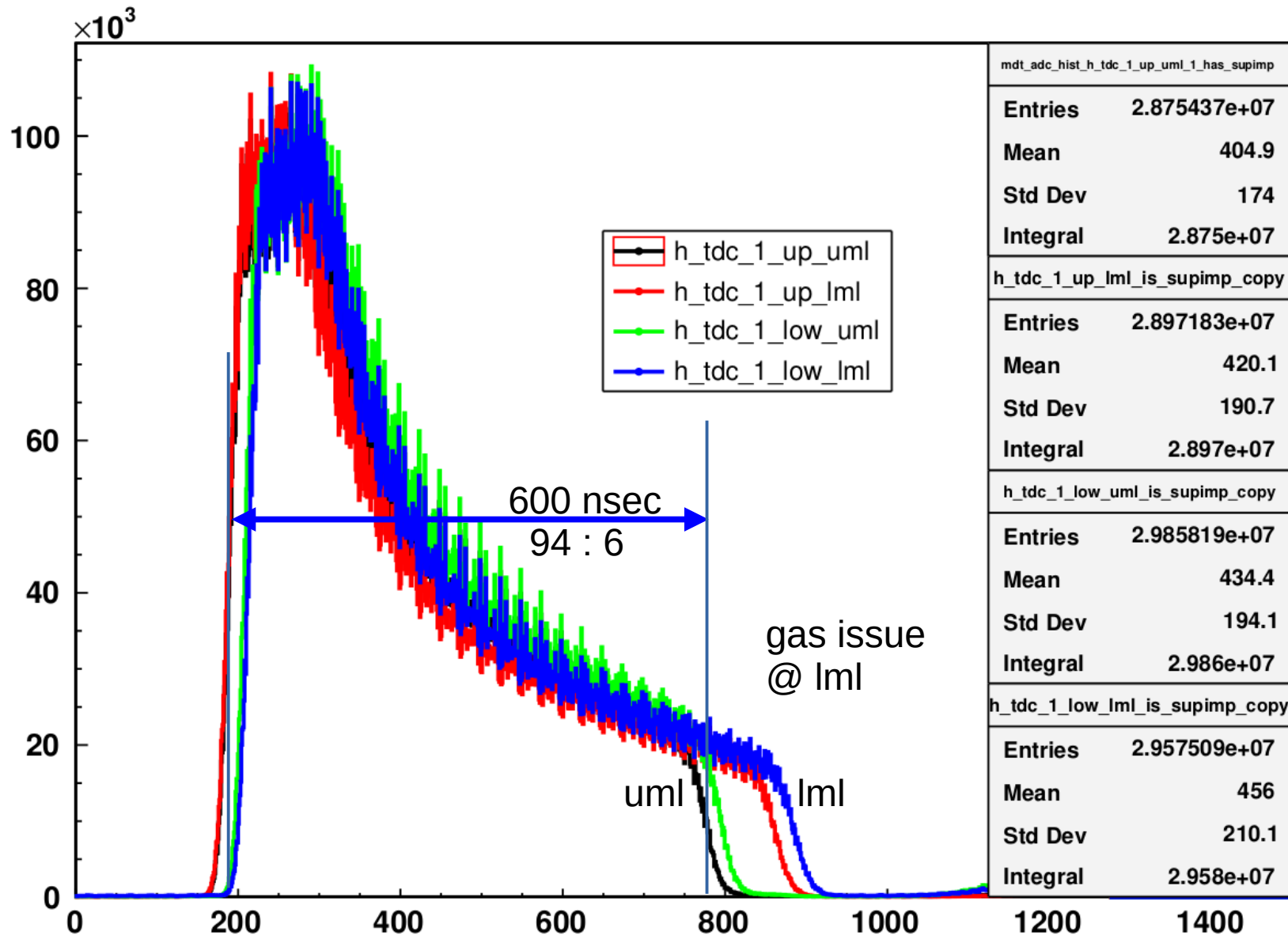
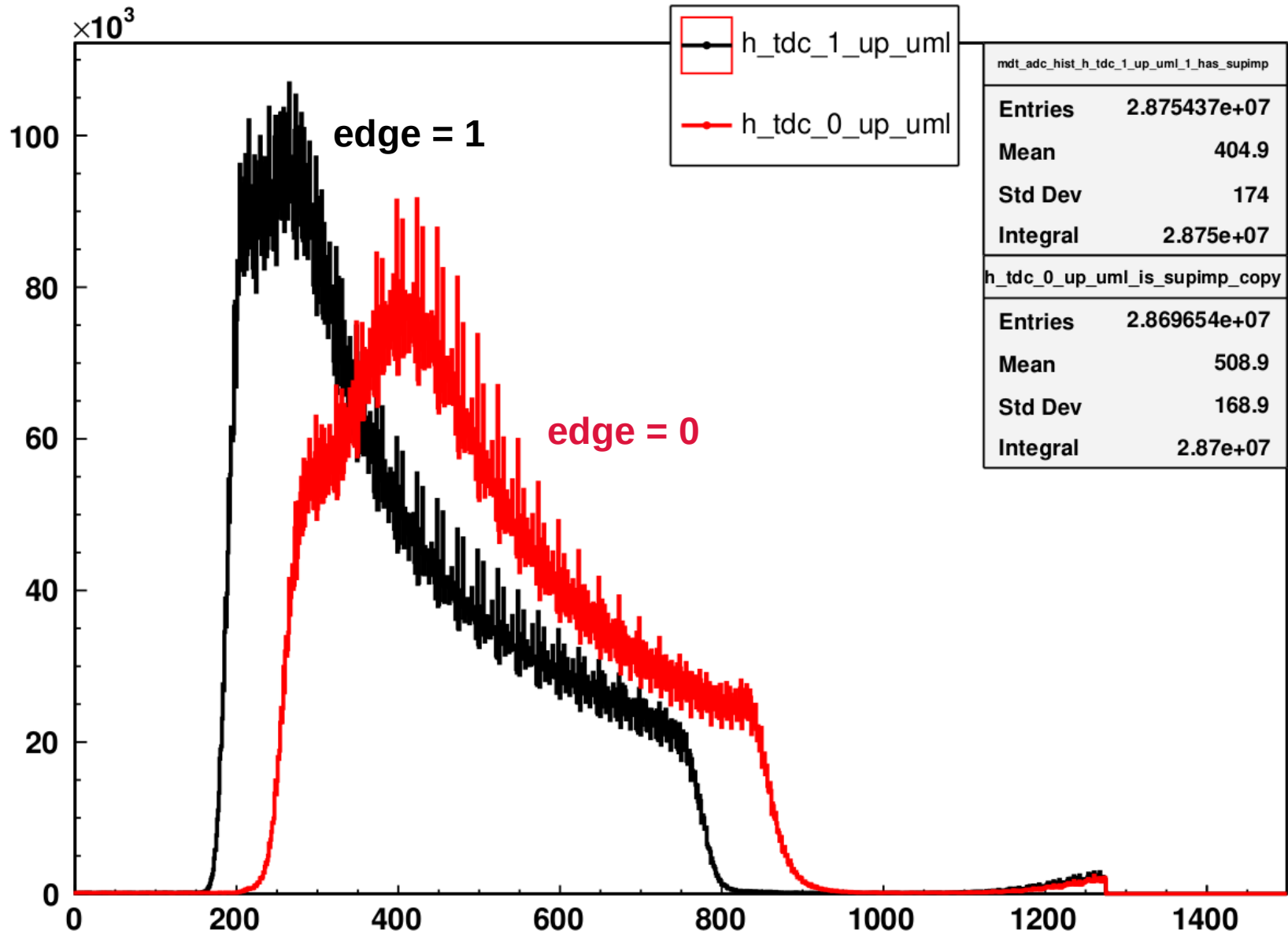


# TDC Spectra: m03\_560V\_new\_20240624\_1504\_xx.MT\_Rawdata

h\_tdc\_1\_up\_uml



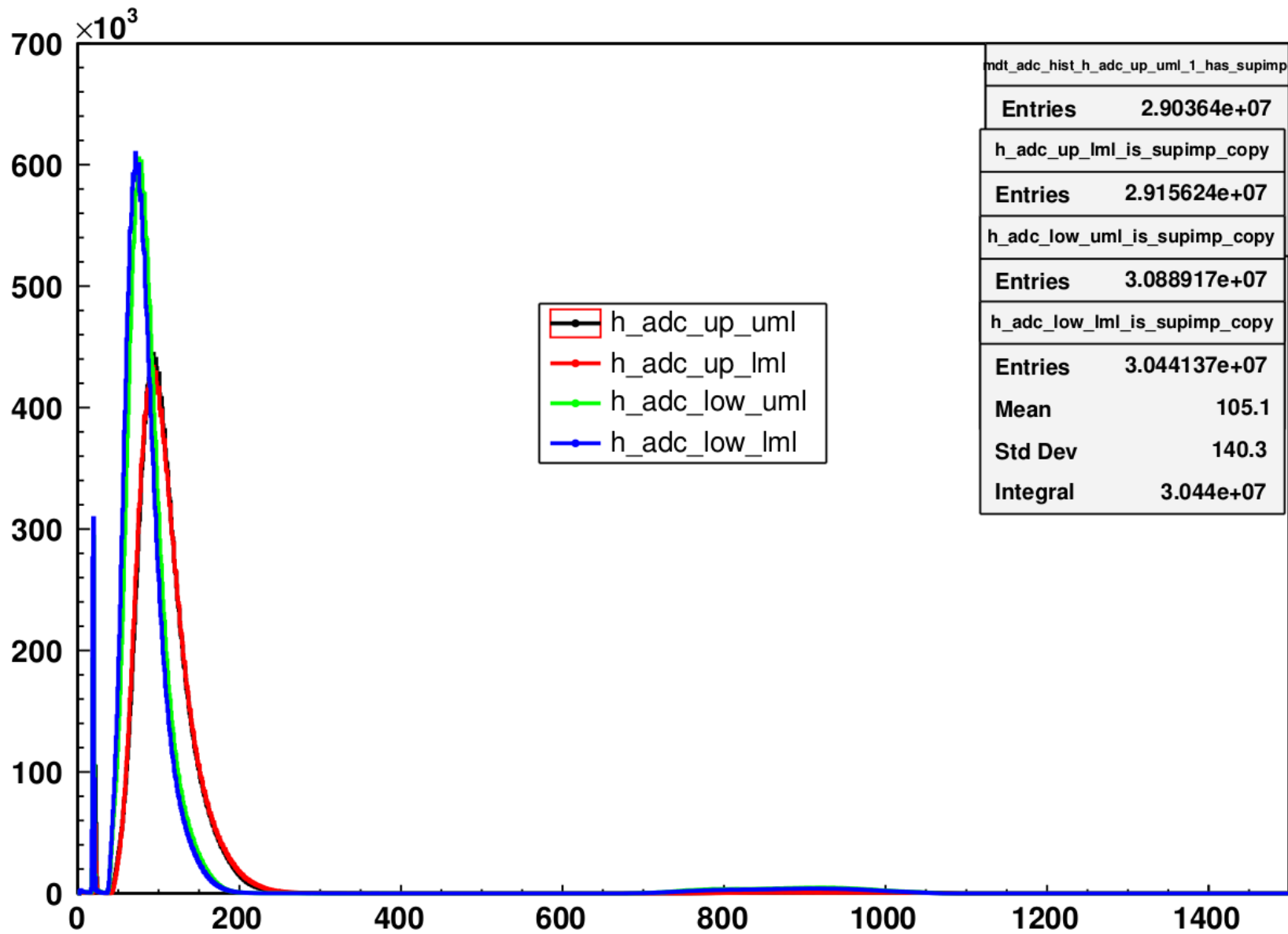
h\_tdc\_1\_up\_uml



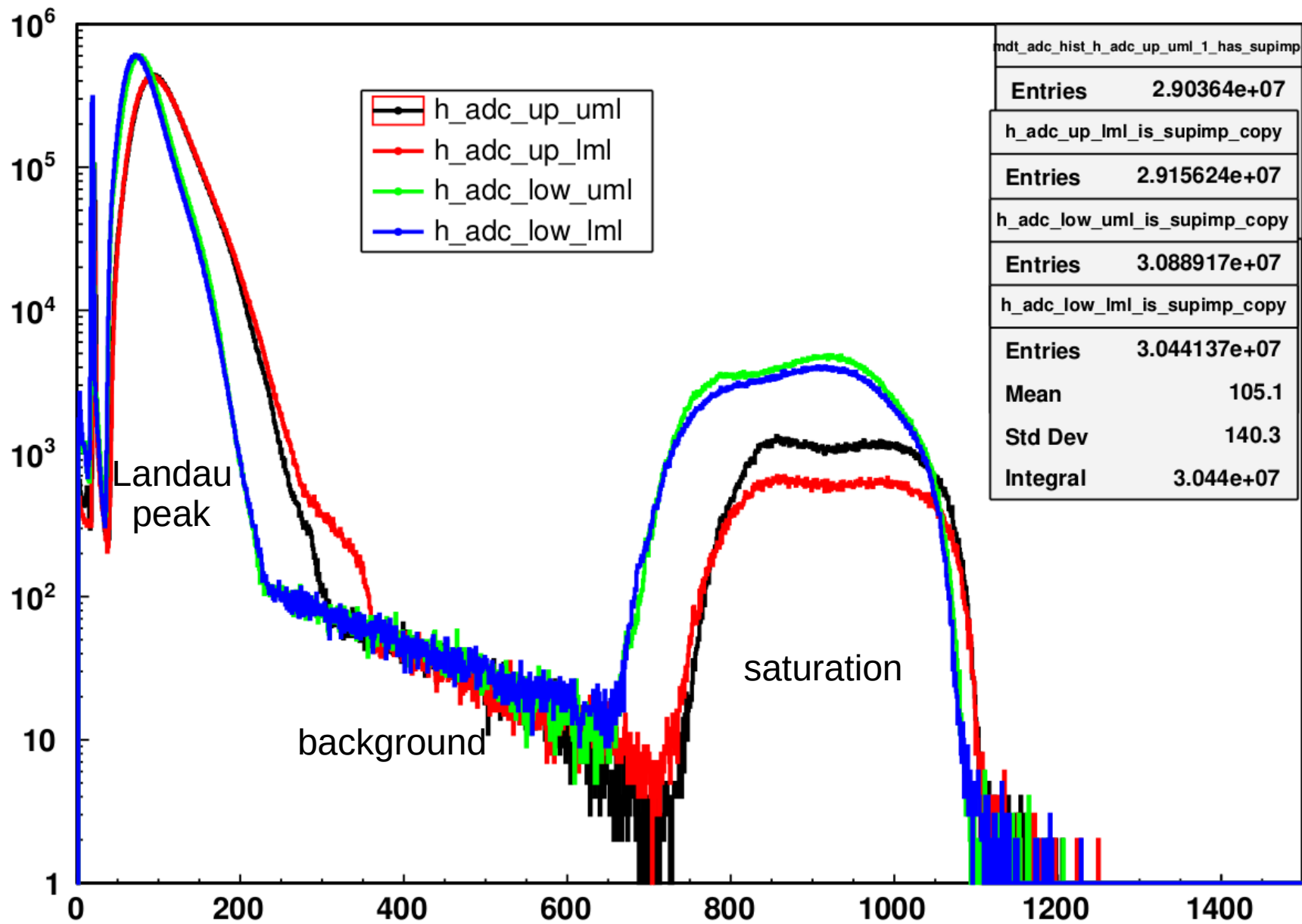
Drawn at: 2024-07-17 16:03:14

# Difference of edge=0 and edge=1 TDC spectra

h\_adc\_up\_uml



# h\_adc\_up\_uml



**TDC header:** Event header from TDC

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																				
1	0	1	0	TDC ID																Event ID																Bunch ID															

TDC: Programmed ID of TDC.  
 Event ID: Event ID from event counter.  
 Bunch ID: Bunch ID of trigger (trigger time tag).

**TDC trailer:** Event trailer from TDC

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																				
1	1	0	0	TDC ID																Event ID																Word Count															

Word count: Number of words from TDC (incl. headers and trailers).

**Mask flags:** Channel flags for channels having hits with in mask window

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
0	0	1	0	TDC ID																Mask flags															

Mask flags: Channels flagged as having hits with in mask window.

**Single measurement data:** Single edge time measurement

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0												
0	0	1	1	TDC ID																Channel T B								Coarse Time								Fine Time							

Channel: TDC channel number.  
 Coarse Time: Coarse time measurement (in bins of 25ns).  
 Fine Time: Fine time measurement from PLL (in bins of 25ns/32).  
 T: Edge type: 1 = leading edge, 0 = trailing edge.  
 E: Error. An error has been detected in the hit measurement (a coarse counter error, a channel select error, or a rejected hit error)

**Combined measurement data:** Combined measurement of leading and trailing edge

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																				
0	1	0	0	TDC ID																Channel								Width								Coarse Time								Fine Time							

Width: Width of pulse in programmed time resolution (CSR9 width\_select). If the pulse width excess the width range (overflow), the width will be \$FF. If trailing edge time becomes less than leading edge time due to count rollover (underflow), the width will be \$00.  
 Coarse Time: Coarse time measurement of leading edge relative to trigger (in bins of 25ns).  
 Fine Time: Fine time measurement of leading edge (in bins of 25ns/32).

**Errors:** Error flags sent if an error condition have been detected

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
0	1	1	0	TDC ID																Error flags															

Error flags: see Table. 2 and Table. 3.

**Debugging data:** Additional information for system debugging

Separator

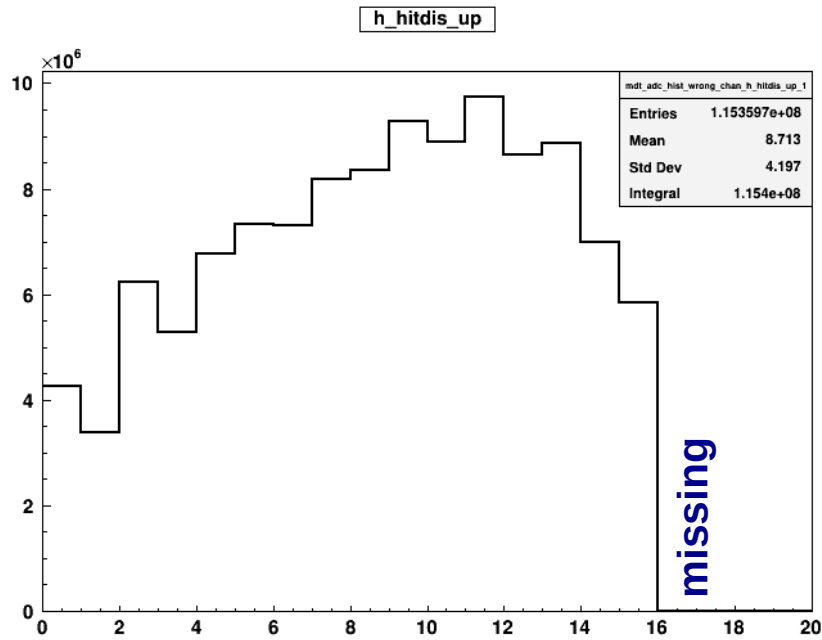
31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
0	1	1	1	TDC ID																Bunch ID															

Bunch ID: Trigger time tag counter when separator was generated.

Buffer Occupancy

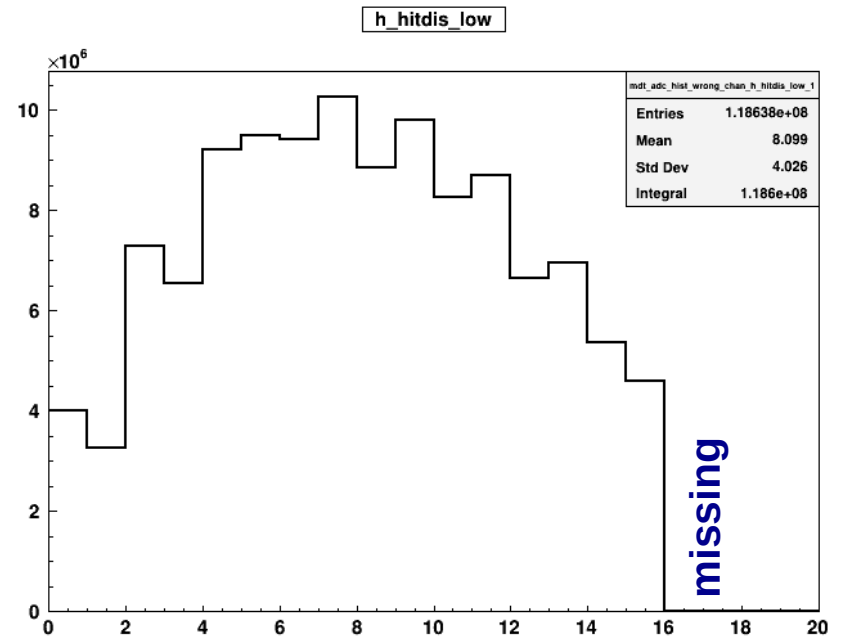
31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0				
0	1	1	1	TDC ID																L1 Occupancy															

L1 occupancy: L1 buffer occupancy.  
 R: Read-out FIFO full.



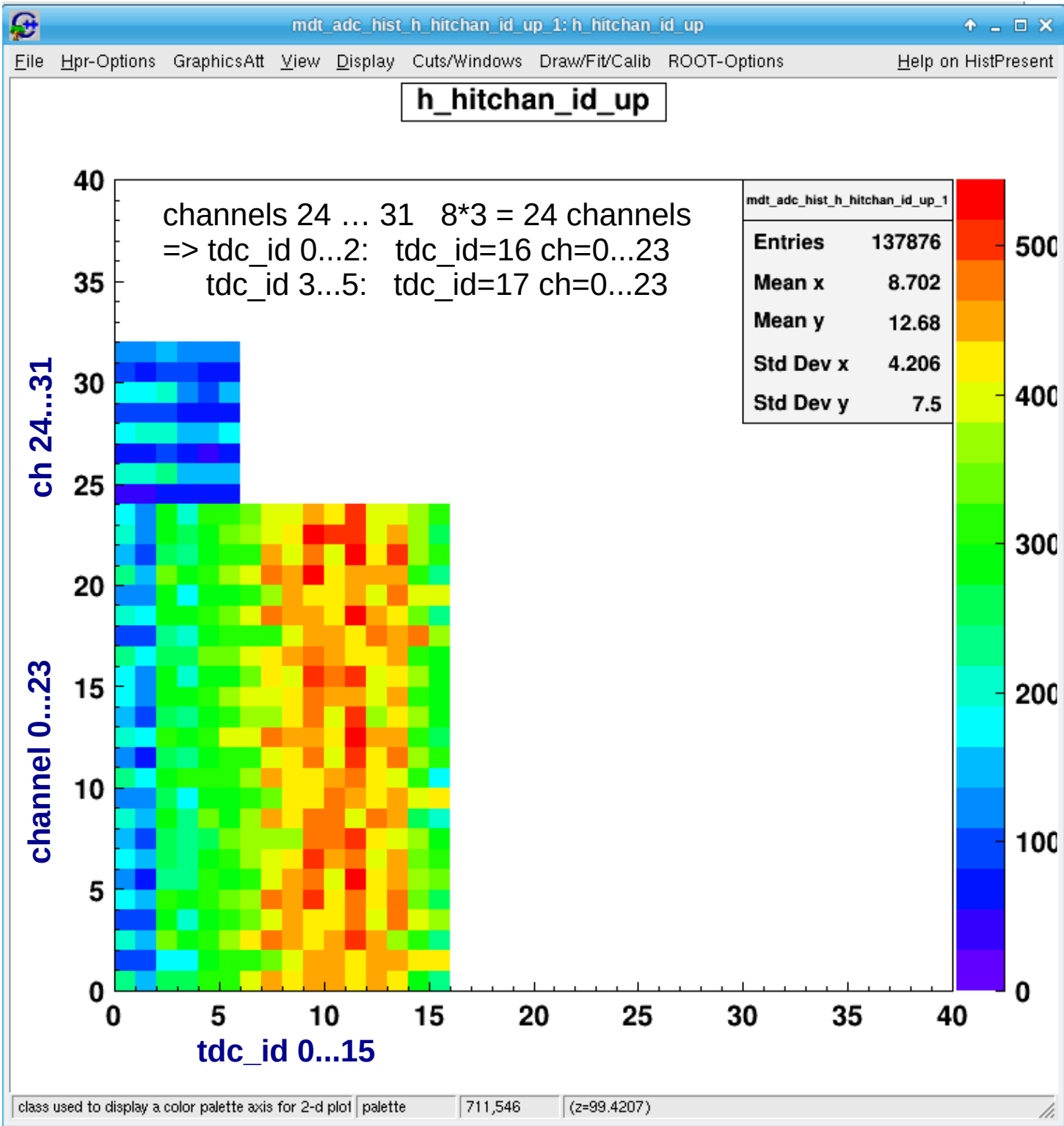
Drawn at: 2024-07-25 13:29:43

**tdc\_id 0...17**

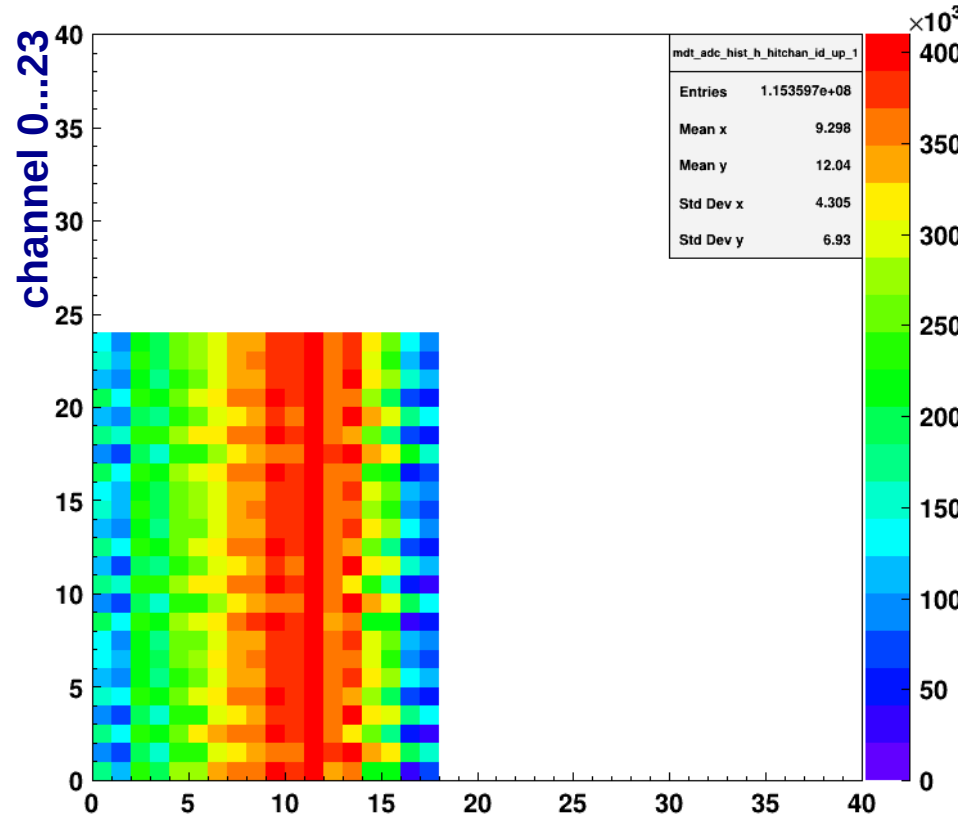


Drawn at: 2024-07-25 13:30:31

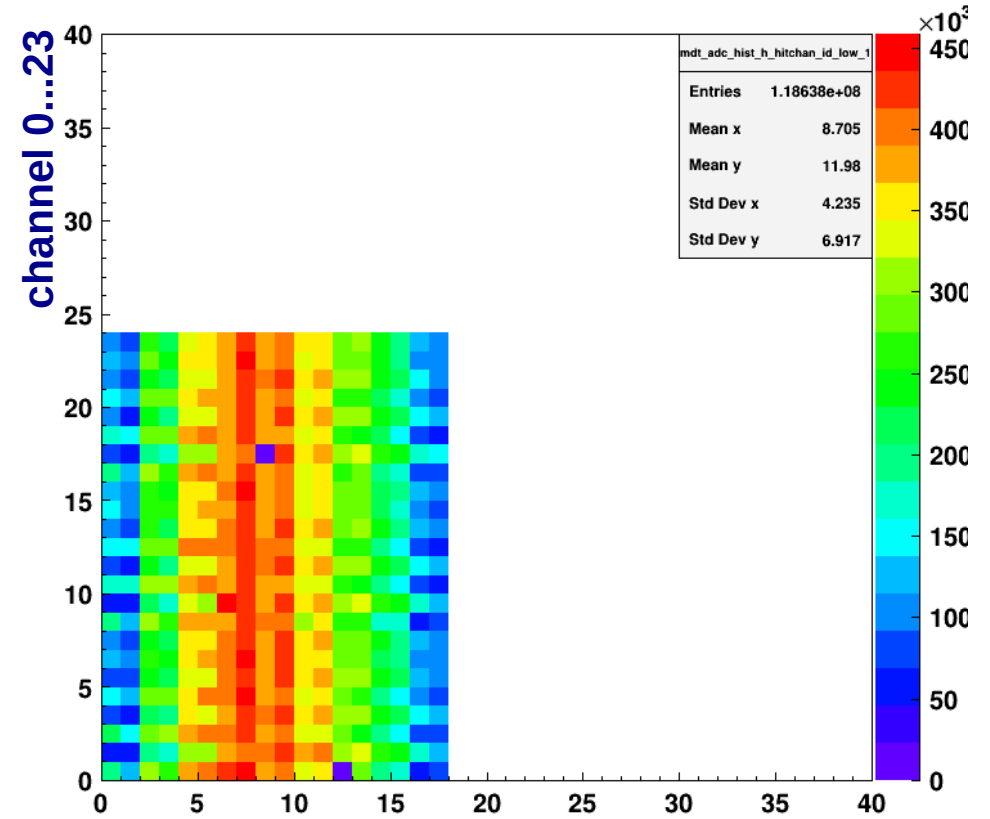
**tdc\_id 0...17**



h\_hitchan\_id\_up



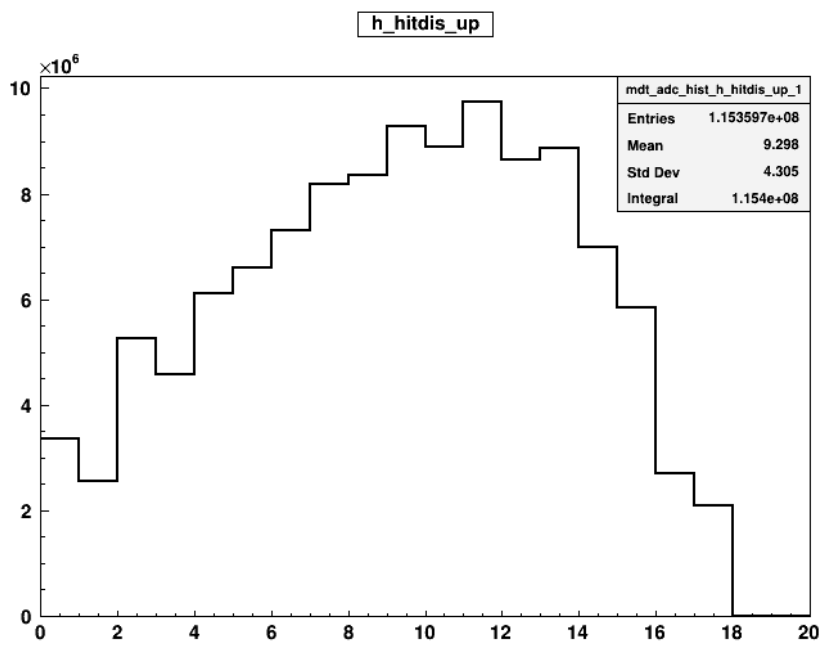
h\_hitchan\_id\_low



Drawn at: 2024-07-22 12:26:36 tdc\_id 0...17

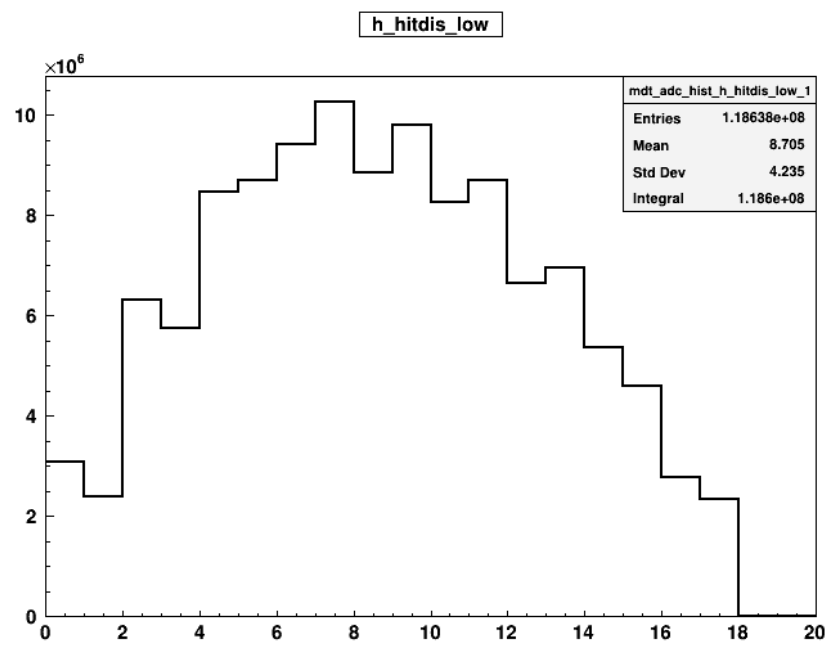
Drawn at: 2024-07-22 12:26:40 tdc\_id 0...17





Drawn at: 2024-07-22 12:25:54

**tdc\_id 0...17**



Drawn at: 2024-07-22 12:26:29

**tdc\_id 0...17**