

The LaTeX report

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1 Setup

1.1 Command history

```
ma5>import /home/sandeep/software/MG5_aMC_v2_9_21/pp24tops/bin/internal/ufomodel
ma5>import /home/sandeep/software/MG5_aMC_v2_9_21/pp24tops/Events/run_07/unweighted_events.lhe.gz
as run_07
ma5>define vl = 12 14 16
ma5>define vl = -16 -14 -12
ma5>define invisible = vt vt ve vm vm ve vl vl
ma5>set main.graphic_render = root
ma5>plot THT 40 0 500 [logY]
ma5>plot MET 40 0 500 [logY]
ma5>plot SQRTS 40 0 500 [logY]
ma5>plot PT(t [1]) 40 0 500 [logY]
ma5>plot ETA(t [1]) 40 -10 10 [logY]
ma5>plot PT(t [2]) 40 0 500 [logY]
ma5>plot ETA(t [2]) 40 -10 10 [logY]
ma5>plot PT(t[1]) 40 0 500 [logY]
ma5>plot ETA(t[1]) 40 -10 10 [logY]
ma5>plot PT(t[2]) 40 0 500 [logY]
ma5>plot ETA(t[2]) 40 -10 10 [logY]
ma5>plot M(t[1] t[2]) 40 0 500 [logY ]
ma5>plot M(t [1] t[1]) 40 0 500 [logY ]
ma5>plot M(t [1] t[1] t[2]) 40 0 500 [logY ]
ma5>plot M(t [1] t[2]) 40 0 500 [logY ]
ma5>plot M(t [1] t [2]) 40 0 500 [logY ]
ma5>plot M(t [1] t [2] t[1]) 40 0 500 [logY ]
ma5>plot M(t [1] t [2] t[1] t[2]) 40 0 500 [logY ]
ma5>plot M(t [1] t [2] t[2]) 40 0 500 [logY ]
ma5>plot M(t [2] t[1]) 40 0 500 [logY ]
ma5>plot M(t [2] t[1] t[2]) 40 0 500 [logY ]
ma5>plot M(t [2] t[2]) 40 0 500 [logY ]
ma5>plot DELTAR(t[1],t[2]) 40 0 10 [logY ]
ma5>plot DELTAR(t [1],t[1]) 40 0 10 [logY ]
ma5>plot DELTAR(t [1],t[2]) 40 0 10 [logY ]
ma5>plot DELTAR(t [1],t [2]) 40 0 10 [logY ]
ma5>plot DELTAR(t [2],t[1]) 40 0 10 [logY ]
ma5>plot DELTAR(t [2],t[2]) 40 0 10 [logY ]
ma5>submit /home/sandeep/software/MG5_aMC_v2_9_21/pp24tops/MA5_PARTON_ANALYSIS_analysis1
```

1.2 Configuration

- MadAnalysis version 1.9.60 (2024-10-01).
- Histograms given for an integrated luminosity of 10fb^{-1} .

2 Datasets

2.1 run_07

- Sample consisting of: [signal](#) events.
- Generated events: [20000](#) events.
- Normalization to the luminosity: [89+/- 1](#) events.
- Ratio (event weight): [0.0044](#) .

Path to the event file	Nr. of events	Cross section (pb)	Negative wgts (%)
pp24tops/Events/run_07/- unweighted_events.lhe.gz	20000	0.00895 @ 0.19%	0.0

3 Histos and cuts

3.1 Histogram 1

* Plot: THT

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	0.0	0.0	0.0	0.0

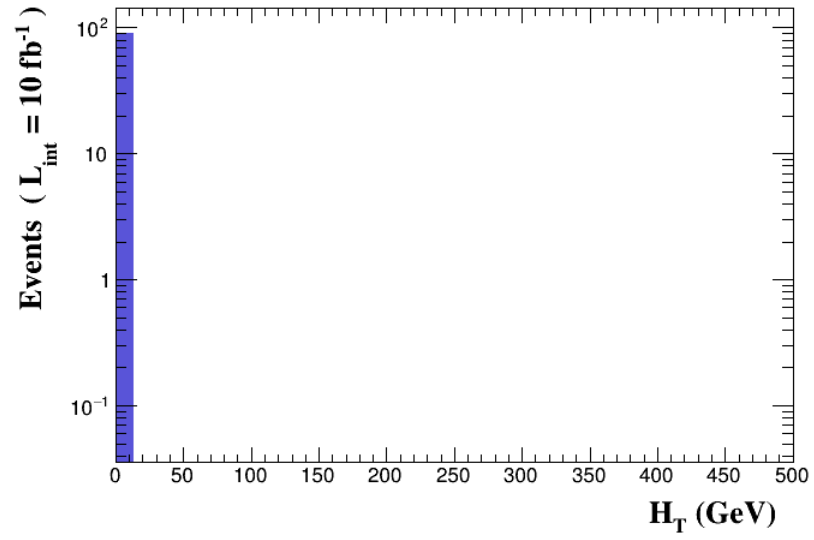


Figure 1.

3.2 Histogram 2

* Plot: MET

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	5.01765e-09	3.446e-09	0.0	0.0

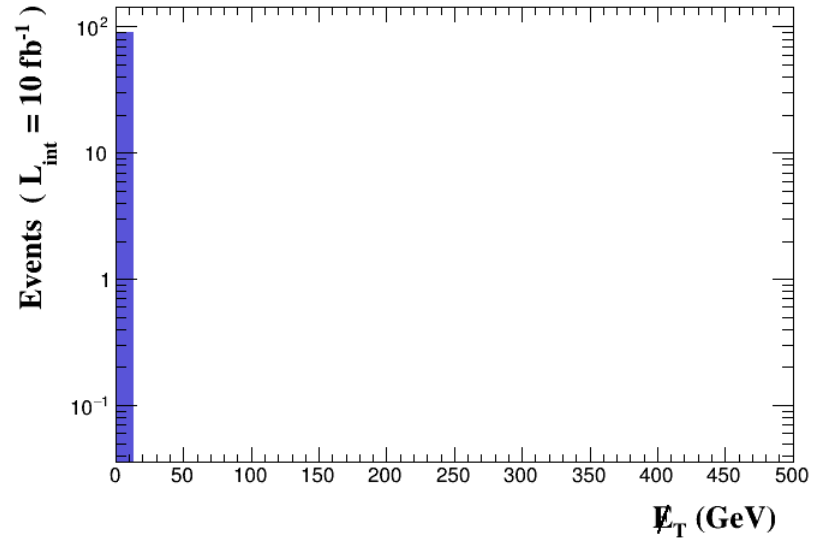


Figure 2.

3.3 Histogram 3

* Plot: SQRTS

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	1677.75	598.1	0.0	100.0

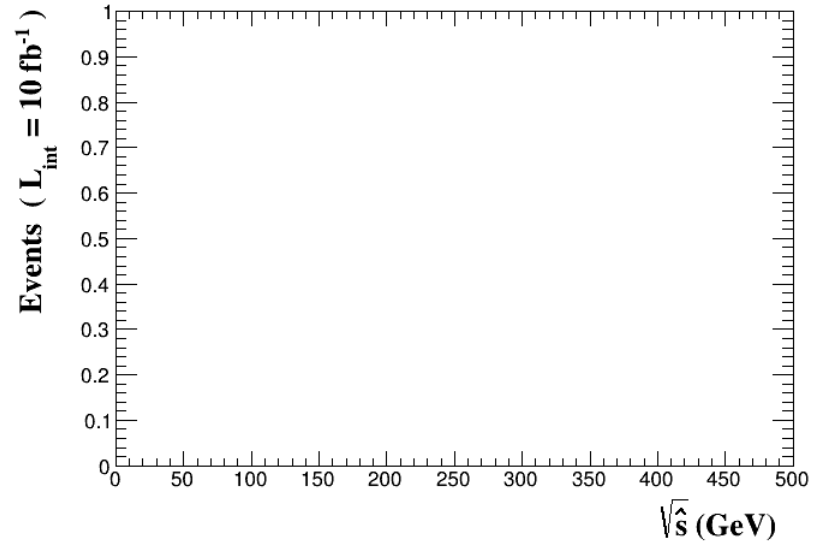


Figure 3.

3.4 Histogram 4

* Plot: $P_T (t_1)$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	279.109	156.8	0.0	8.66

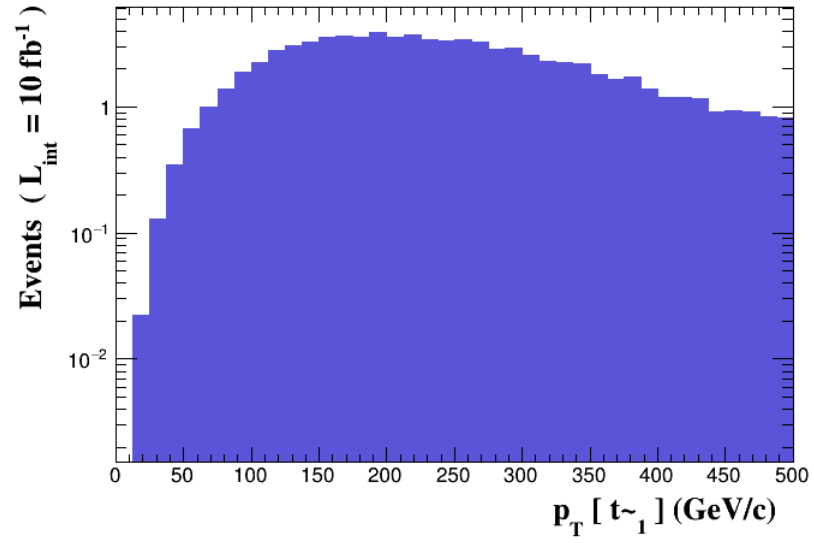


Figure 4.

3.5 Histogram 5

* Plot: $\text{ETA} (t [1])$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	-0.000307821	1.285	0.0	0.0

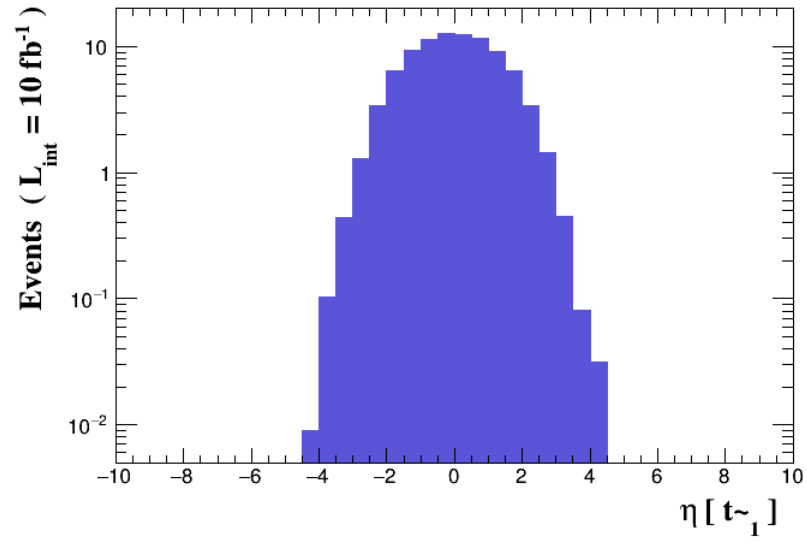


Figure 5.

3.6 Histogram 6

* Plot: PT (t [2])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	148.744	104.5	0.0	1.035

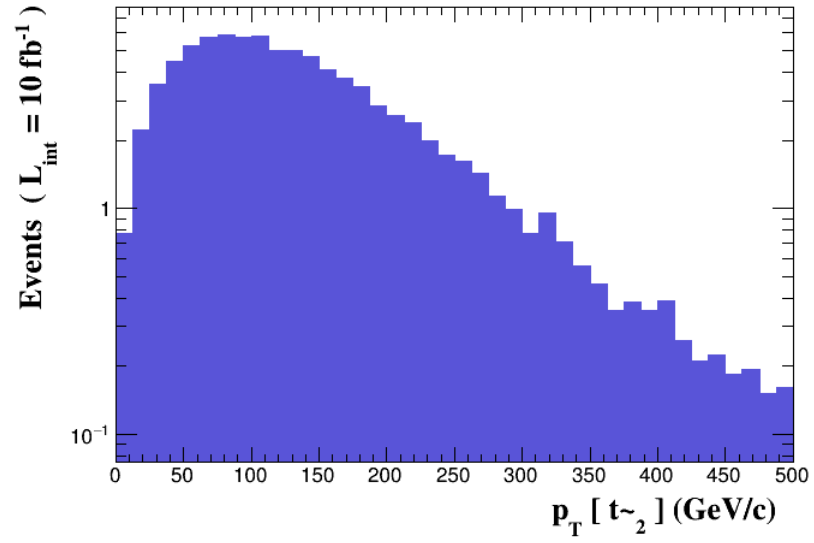


Figure 6.

3.7 Histogram 7

* Plot: $\text{ETA} (t_2)$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	-0.0136508	1.797	0.0	0.0

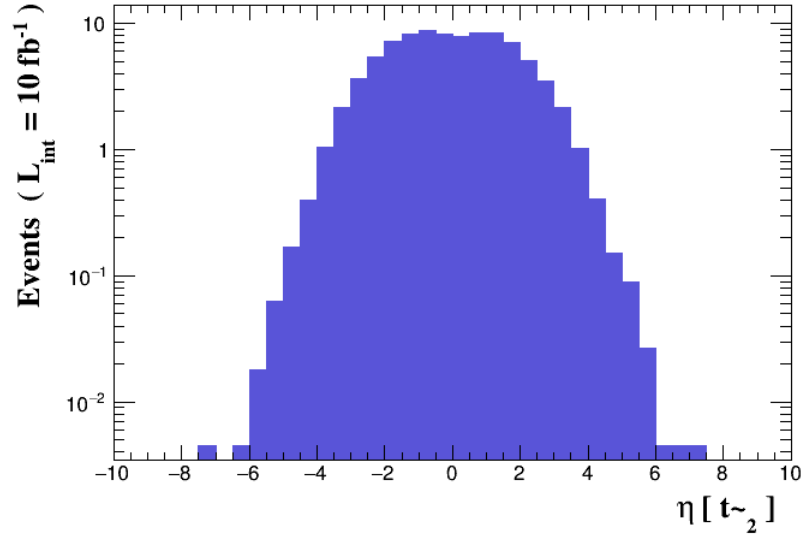


Figure 7.

3.8 Histogram 8

* Plot: $PT (t[1])$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	277.67	156.3	0.0	8.705

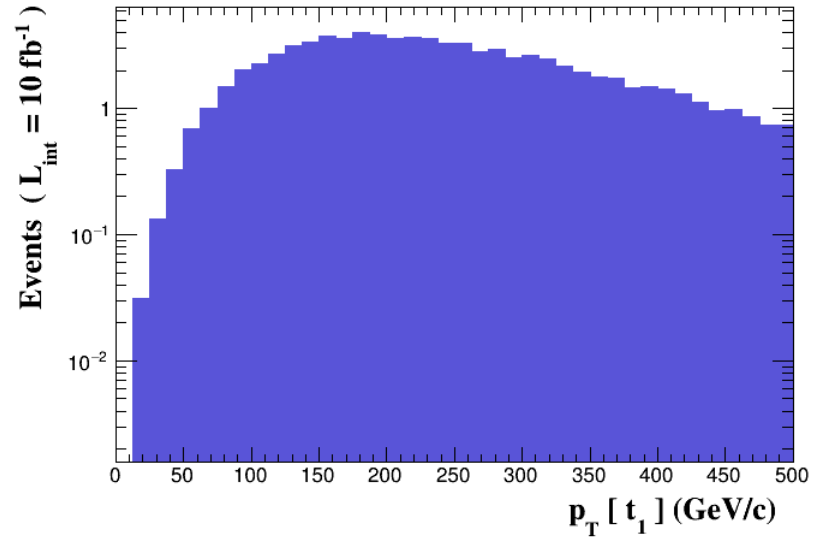


Figure 8.

3.9 Histogram 9

* Plot: $\text{ETA} (t[1])$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	0.00893356	1.281	0.0	0.0

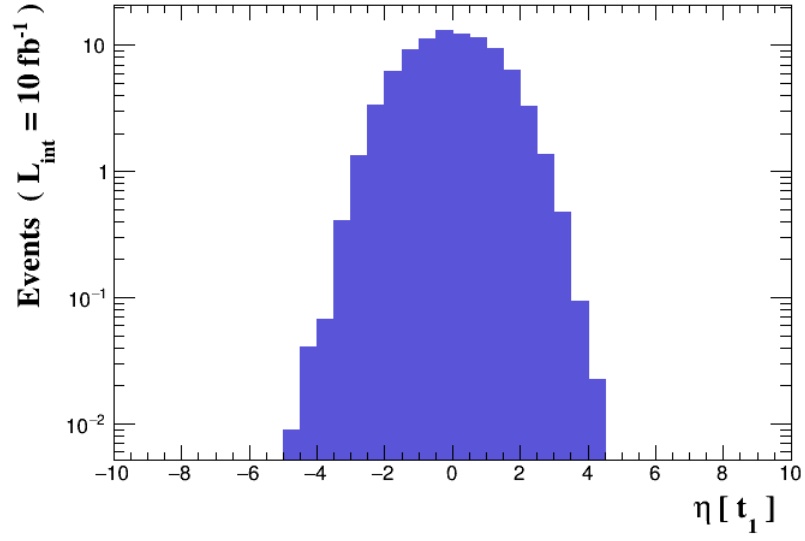


Figure 9.

3.10 Histogram 10

* Plot: PT (t[2])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	147.213	104.9	0.0	1.145

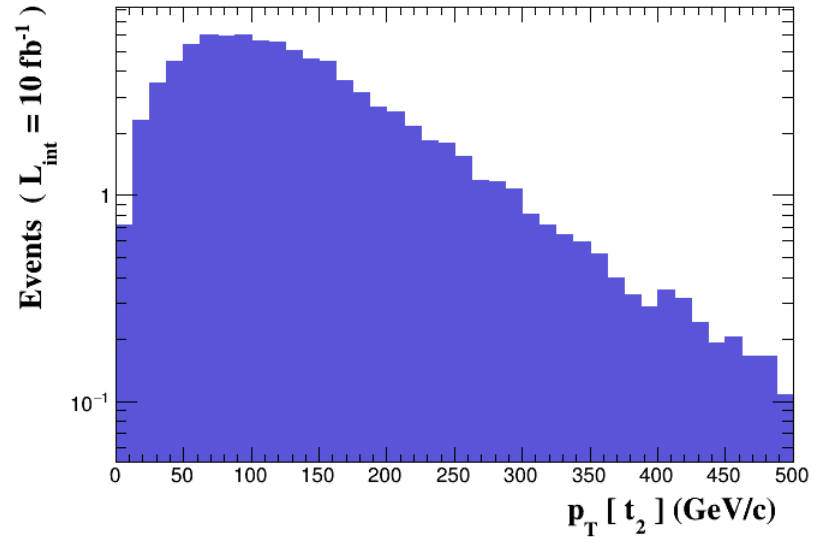


Figure 10.

3.11 Histogram 11

* Plot: $\text{ETA} (t_2)$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	-0.0272682	1.787	0.0	0.0

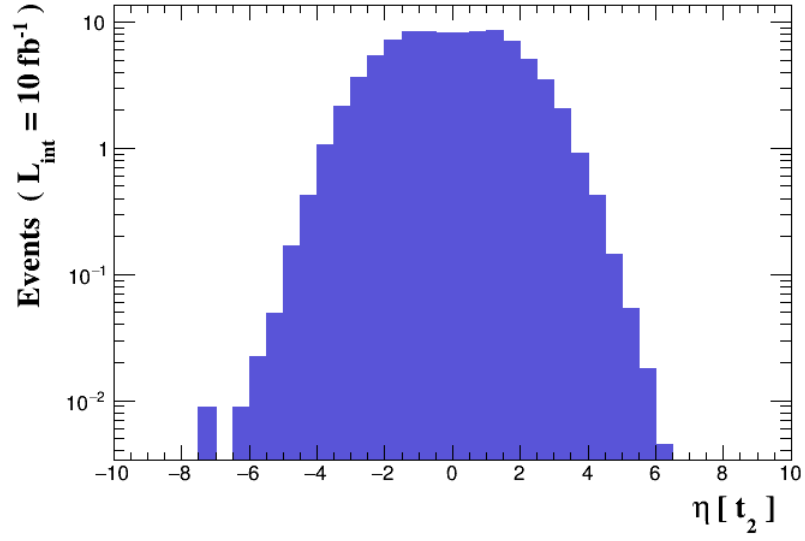


Figure 11.

3.12 Histogram 12

* Plot: $M (t_1 t_2)$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	721.626	351.9	0.0	70.65

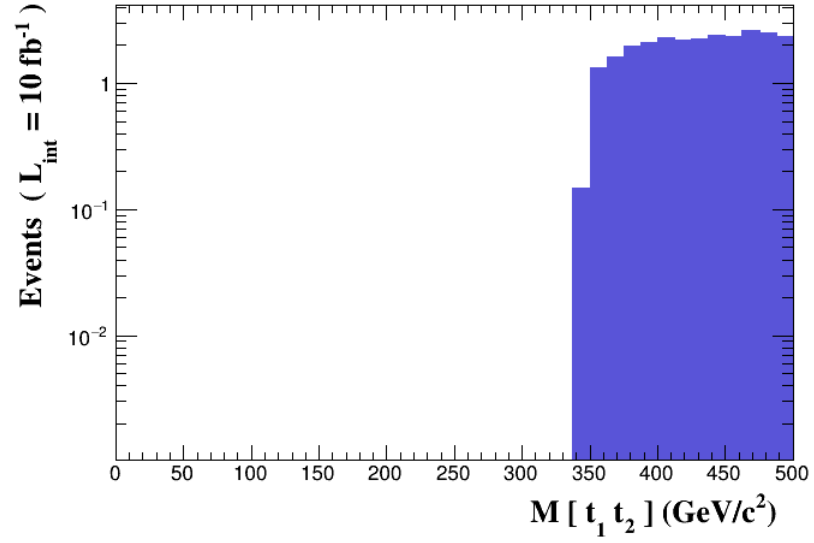


Figure 12.

3.13 Histogram 13

* Plot: $M (t_1 t_{\sim 1})$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	801.946	356.8	0.0	85.19

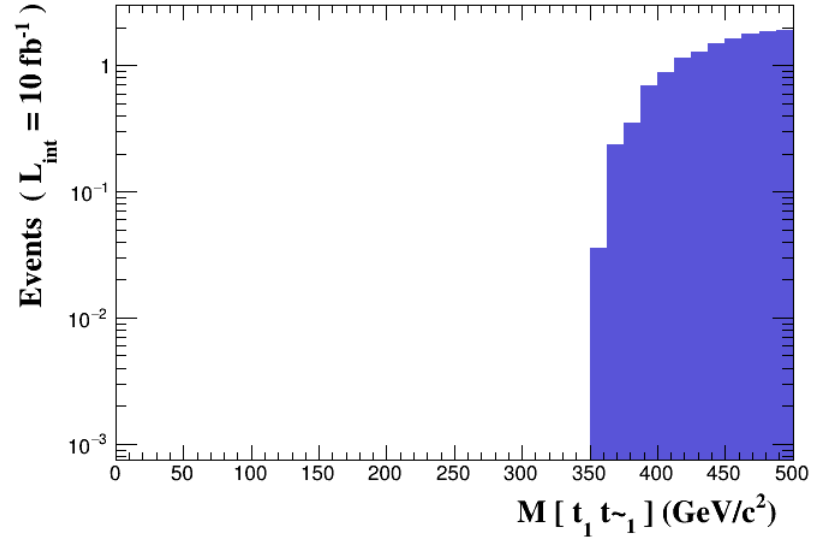


Figure 13.

3.14 Histogram 14

* Plot: $M (t[1] t[2] t[1])$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	1244.18	486.0	0.0	100.0

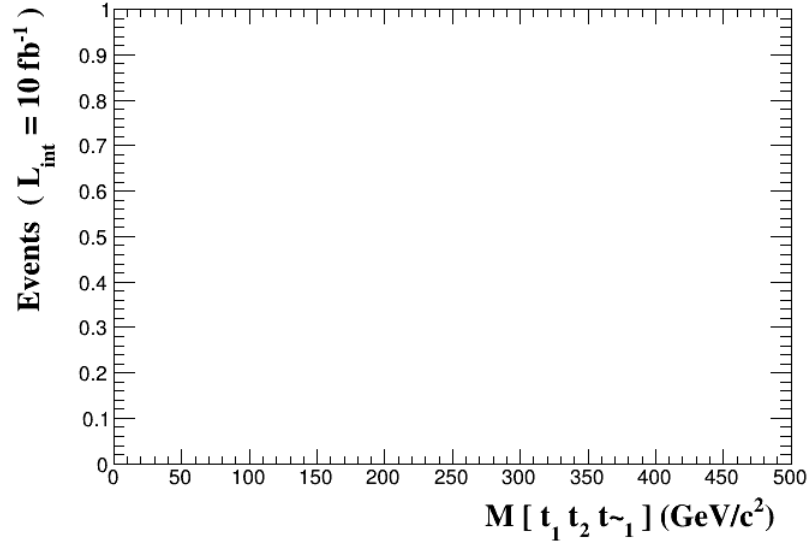


Figure 14.

3.15 Histogram 15

* Plot: $M (t_2 t_{\sim 1} t_1)$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	618.163	277.1	0.0	57.99

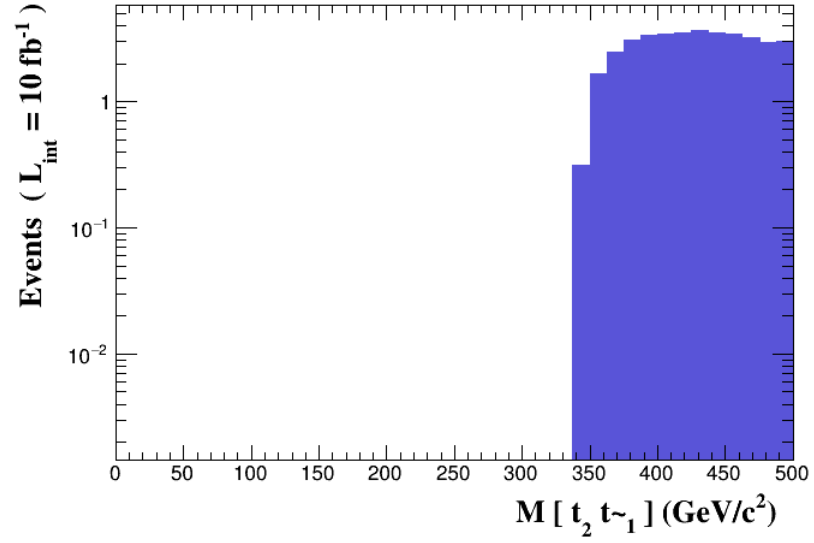


Figure 15.

3.16 Histogram 16

* Plot: $M (\tau [1] \tau [2])$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	721.834	346.1	0.0	71.56

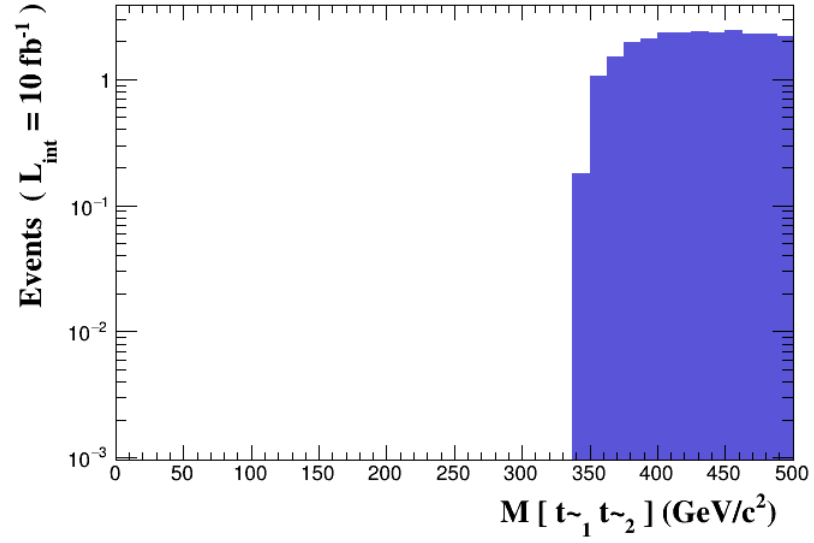


Figure 16.

3.17 Histogram 17

* Plot: $M (t [1] t [1] t [2])$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	1244.0	483.8	0.0	100.0

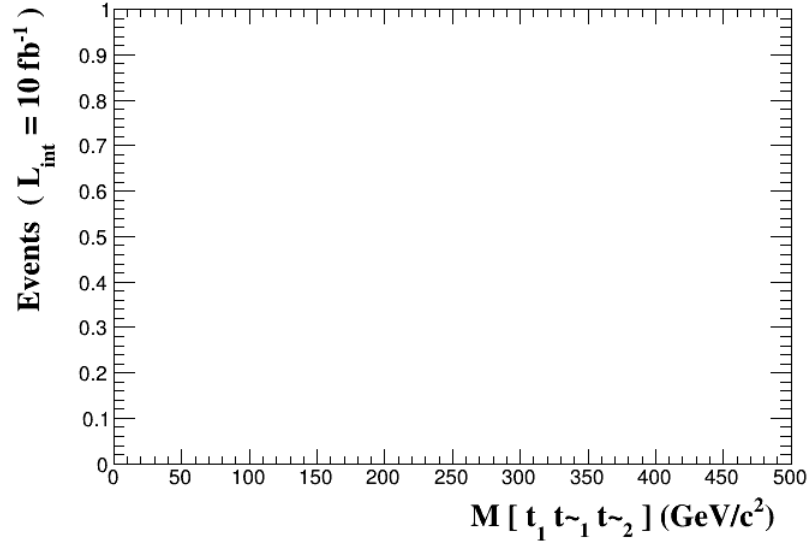


Figure 17.

3.18 Histogram 18

* Plot: $M (t [1] t [2] t [1] t [2])$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	1677.75	598.1	0.0	100.0

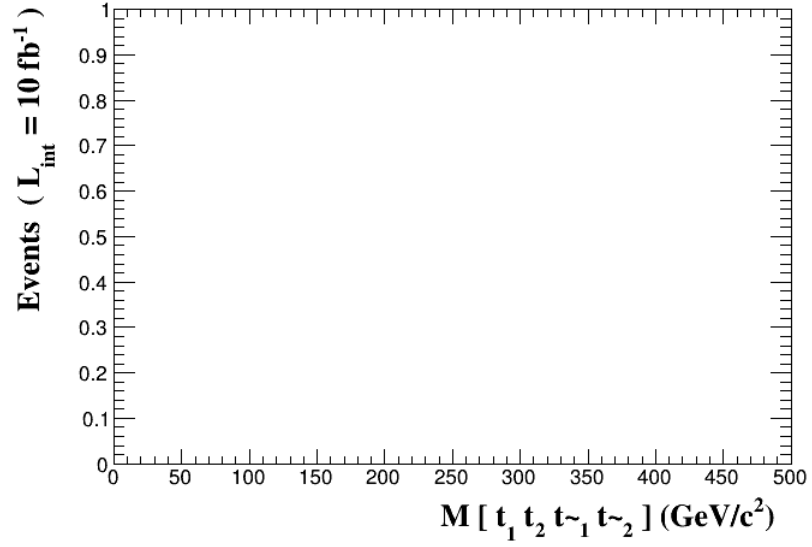


Figure 18.

3.19 Histogram 19

* Plot: $M (\tau [2] \tau [1] \tau [2])$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	1116.38	448.1	0.0	100.0

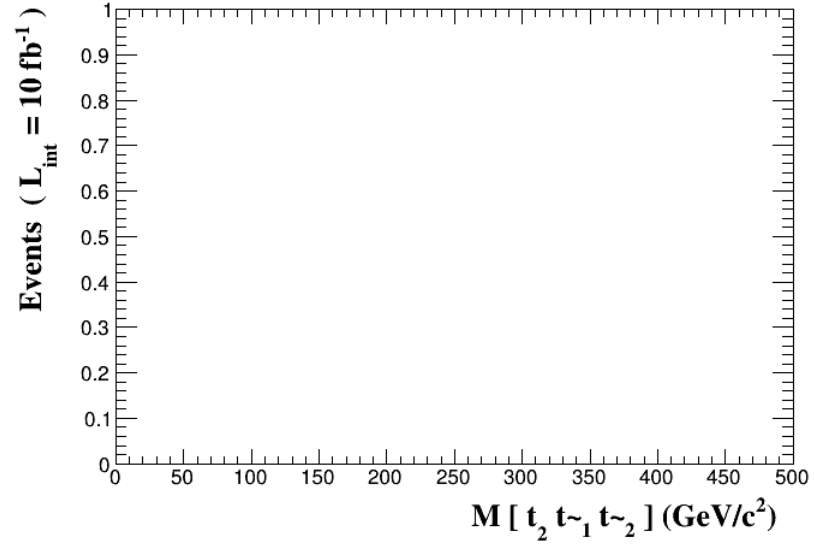


Figure 19.

3.20 Histogram 20

* Plot: $M (t[1] t[2])$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	617.557	280.6	0.0	57.8

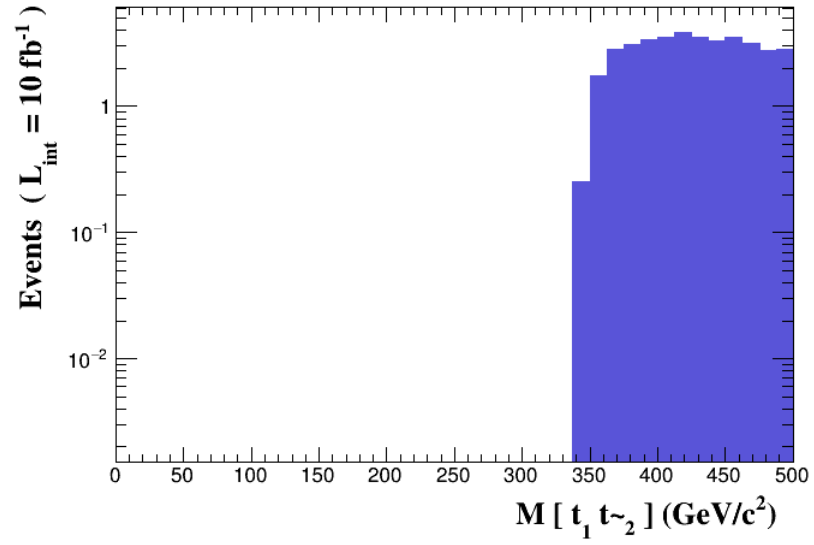


Figure 20.

3.21 Histogram 21

* Plot: $M (t[1] t[2] t[2])$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	1116.16	454.1	0.0	100.0

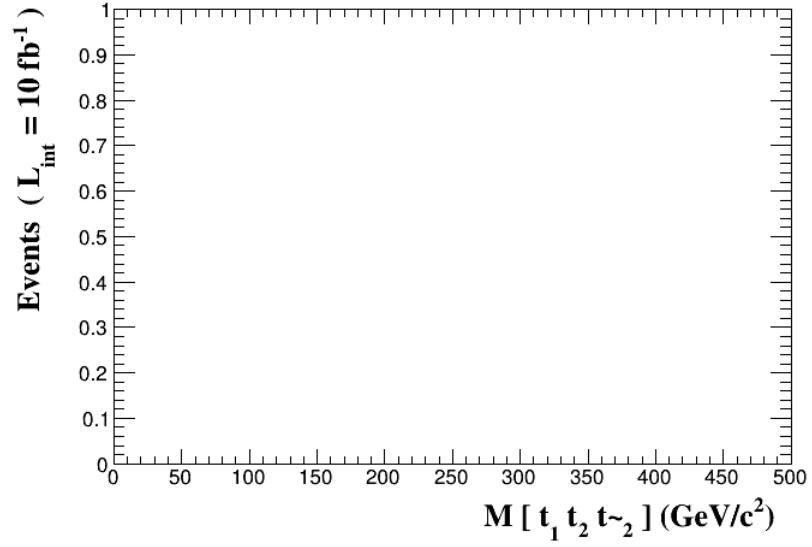


Figure 21.

3.22 Histogram 22

* Plot: $M (t_2 t_{\sim 2})$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	595.412	287.4	0.0	49.57

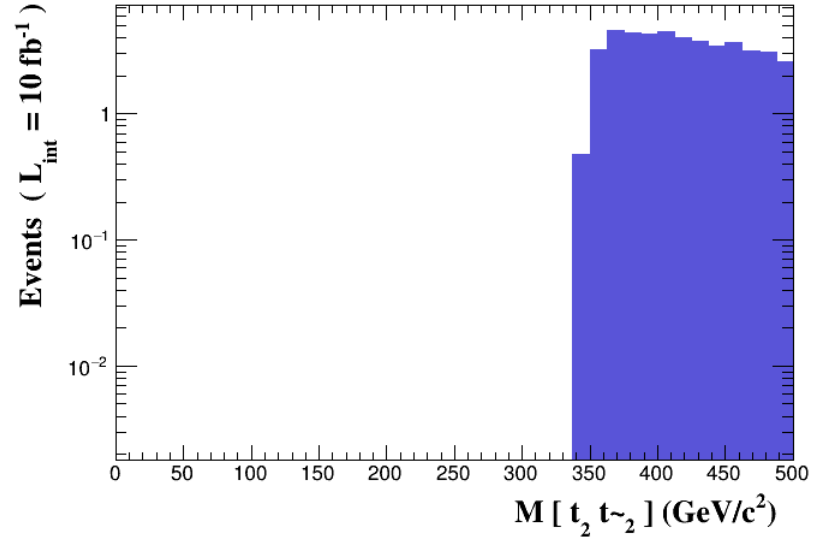


Figure 22.

3.23 Histogram 23

* Plot: DELTAR (t[1] , t[2])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	2.94058	1.067	0.0	0.0

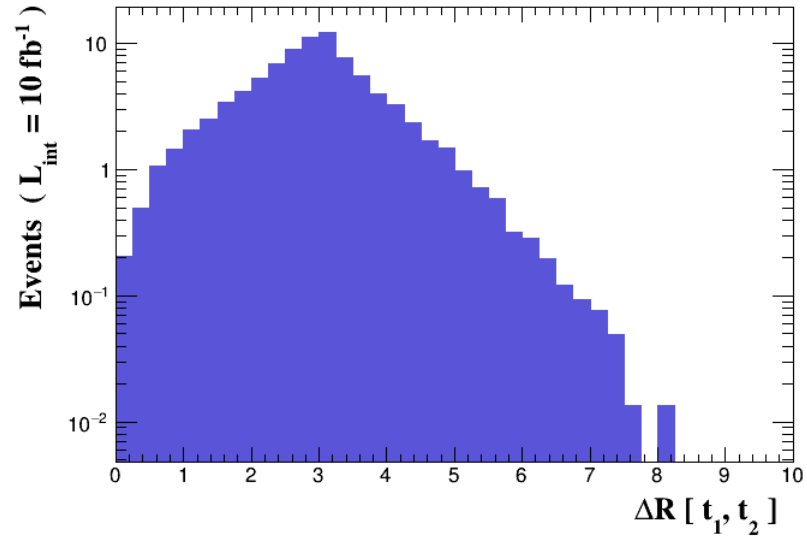


Figure 23.

3.24 Histogram 24

* Plot: DELTAR (t [1] , t[1])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	2.99085	0.6875	0.0	0.0

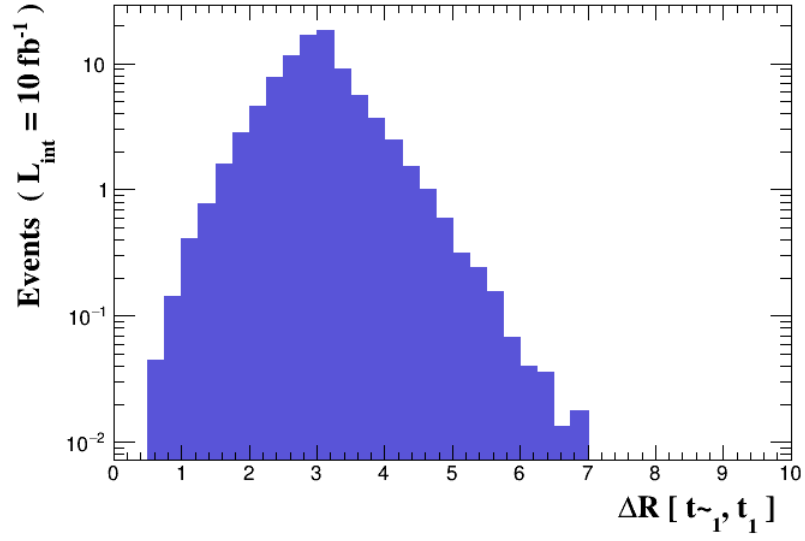


Figure 24.

3.25 Histogram 25

* Plot: DELTAR (t [1] , t[2])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	2.38502	1.117	0.0	0.005

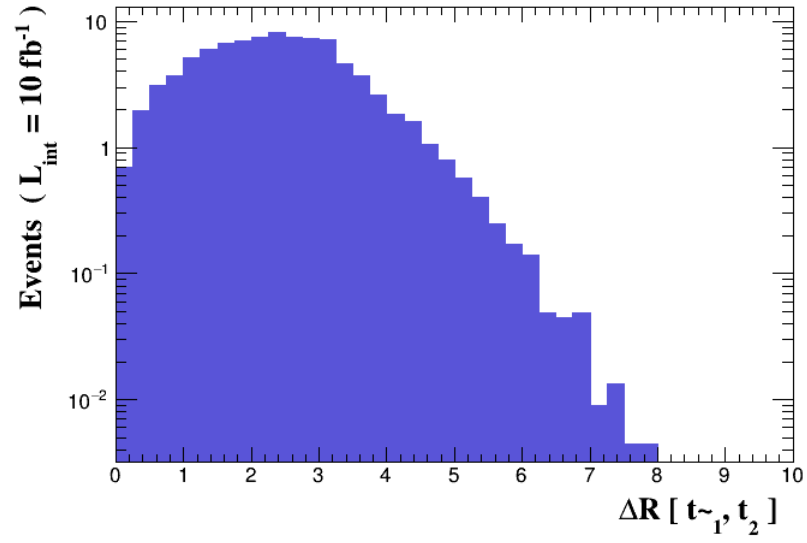


Figure 25.

3.26 Histogram 26

* Plot: DELTAR (t [1] , t [2])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	2.94417	1.052	0.0	0.0

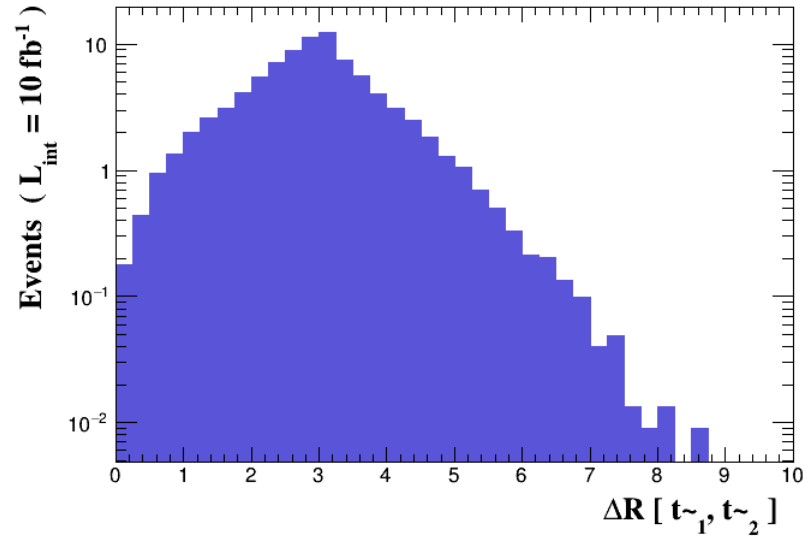


Figure 26.

3.27 Histogram 27

* Plot: DELTAR (t [2] , t[1])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	2.37622	1.123	0.0	0.0

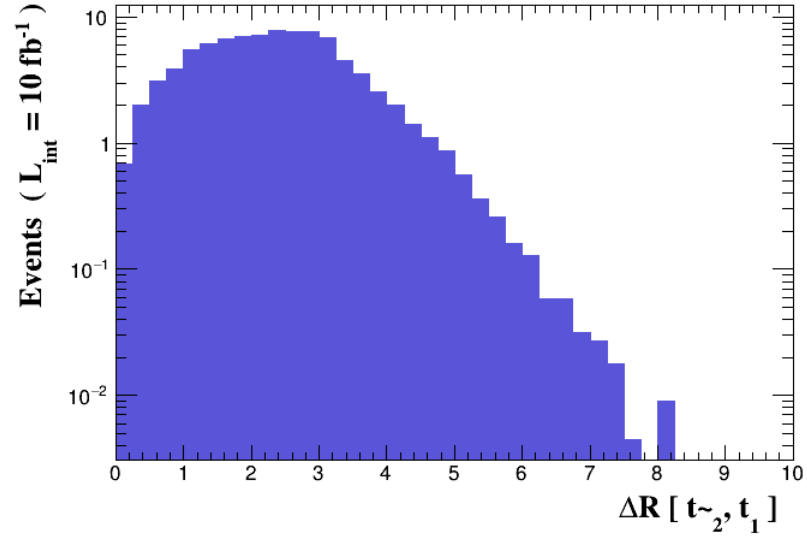


Figure 27.

3.28 Histogram 28

* Plot: DELTAR (t [2] , t[2])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
run_07	89.5	1.0	2.76763	1.299	0.0	0.0

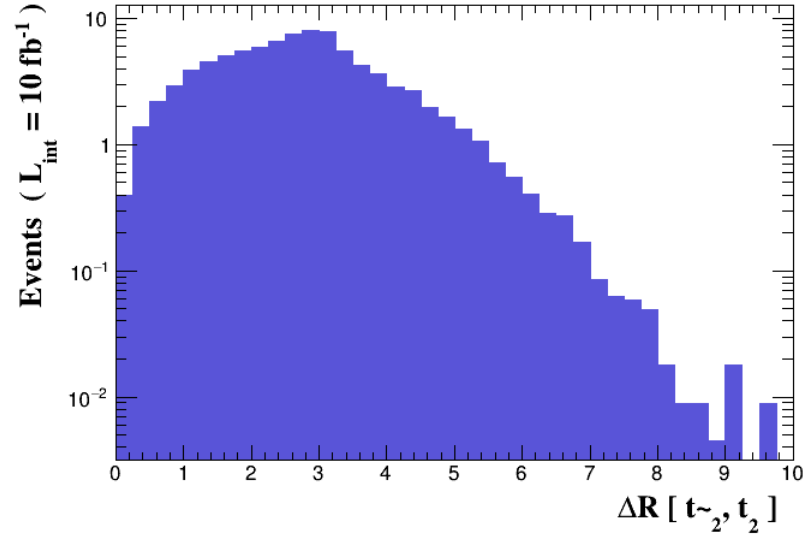


Figure 28.