

The LaTeX report

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Contents

1	Setup	2
1.1	Command history	2
1.2	Configuration	2
2	Datasets	3
2.1	unweighted_events	3
3	Histos and cuts	4
3.1	Histogram 1	4
3.2	Histogram 2	5
3.3	Histogram 3	6
3.4	Histogram 4	7
3.5	Histogram 5	8
3.6	Histogram 6	9
3.7	Histogram 7	10
3.8	Histogram 8	11
3.9	Histogram 9	12
3.10	Histogram 10	13
3.11	Histogram 11	14
3.12	Histogram 12	15
3.13	Histogram 13	16
3.14	Histogram 14	17
3.15	Histogram 15	18
3.16	Histogram 16	19
3.17	Histogram 17	20
3.18	Histogram 18	21
3.19	Histogram 19	22
3.20	Histogram 20	23
3.21	Histogram 21	24
3.22	Histogram 22	25

1 Setup

1.1 Command history

```
ma5>
ma5>import /home/jcordero/CMS/Theory/MG5_aMC_v2_7_2//bin/internal/ufomodel
ma5>import /home/jcordero/CMS/Theory/MG5_aMC_v2_7_2/corderom/output/results/ntgc_llg_CBtWL4/-
Events/run_01/unweighted_events.lhe.gz as unweighted_events
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(z[1]) 40 0 1000 [logY interstate]
ma5>plot ETA(z[1]) 40 -7 7 [logY interstate]
ma5>plot PT(a[1]) 40 0 1000 [logY]
ma5>plot ETA(a[1]) 40 -7 7 [logY]
ma5>plot M(z[1] a[1]) 40 0 800 [logY allstate]
ma5>plot DELTAR(z[1],a[1]) 40 0 8 [logY allstate]
ma5>plot PT(a[1]) 40 0 800 [logY]
ma5>plot ETA(a[1]) 40 -7 7 [logY]
ma5>plot PT(l-[1]) 40 0 650 [logY]
ma5>plot ETA(l-[1]) 40 -7 7 [logY]
ma5>plot PT(l+[1]) 40 0 650 [logY]
ma5>plot ETA(l+[1]) 40 -7 7 [logY]
ma5>plot M(a[1] l+[1]) 40 0 800 [logY ]
ma5>plot M(a[1] l-[1]) 40 0 800 [logY ]
ma5>plot M(a[1] l-[1] l+[1]) 40 0 900 [logY ]
ma5>plot M(l-[1] l+[1]) 40 20 200 [logY ]
ma5>plot DELTAR(a[1],l+[1]) 40 0 8 [logY ]
ma5>plot DELTAR(a[1],l-[1]) 40 0 8 [logY ]
ma5>plot DELTAR(l-[1],l+[1]) 40 0 5 [logY ]
ma5>submit /home/jcordero/CMS/Theory/MG5_aMC_v2_7_2/corderom/output/results/ntgc_llg_CBtWL4/-
MA5_PARTON_ANALYSIS_analysis1
```

1.2 Configuration

- MadAnalysis version 1.8.34 (2019/12/04).
- Histograms given for an integrated luminosity of 10fb^{-1} .

2 Datasets

2.1 unweighted_events

- Sample consisting of: [signal](#) events.
- Generated events: [10000](#) events.
- Normalization to the luminosity: [55](#)+/- [1](#) events.
- Ratio (event weight): [0.0055](#) .

Path to the event file	Nr. of events	Cross section (pb)	Negative wgts (%)
output/results/- ntgc_llg_CBtWL4/Events/- run_01/unweighted_events.lhe.gz	10000	0.00557 @ 0.31%	0.0

3 Histos and cuts

3.1 Histogram 1

* Plot: THT

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	0.0	0.0	0.0	0.0

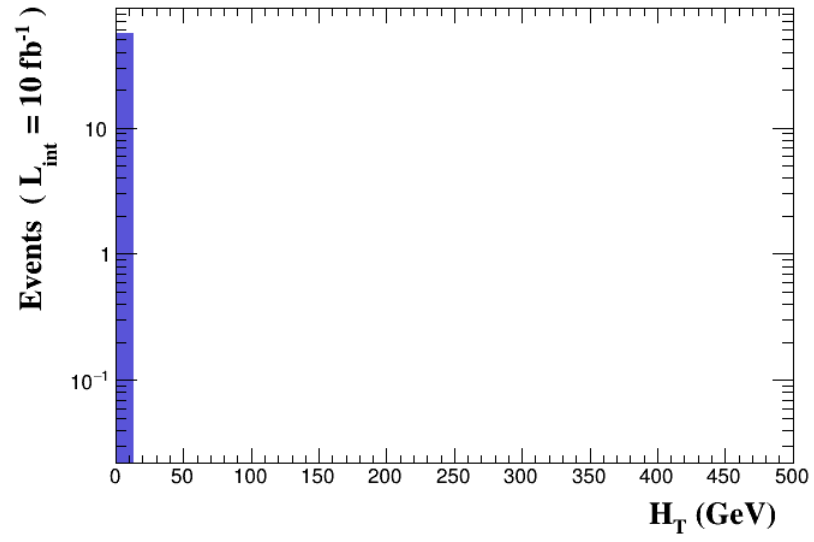


Figure 1.

3.2 Histogram 2

* Plot: MET

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	1.20973e-08	1.666e-08	0.0	0.0

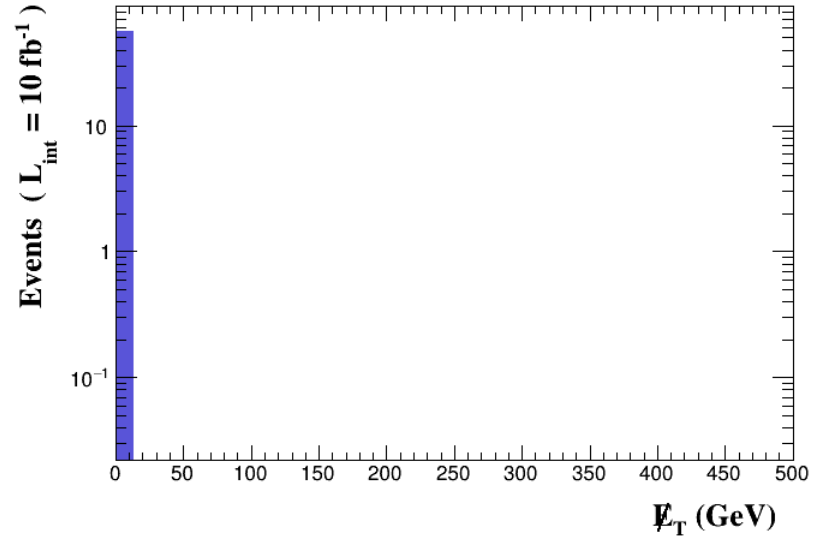


Figure 2.

3.3 Histogram 3

* Plot: SQRTS

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	2394.86	1240	0.0	98.51

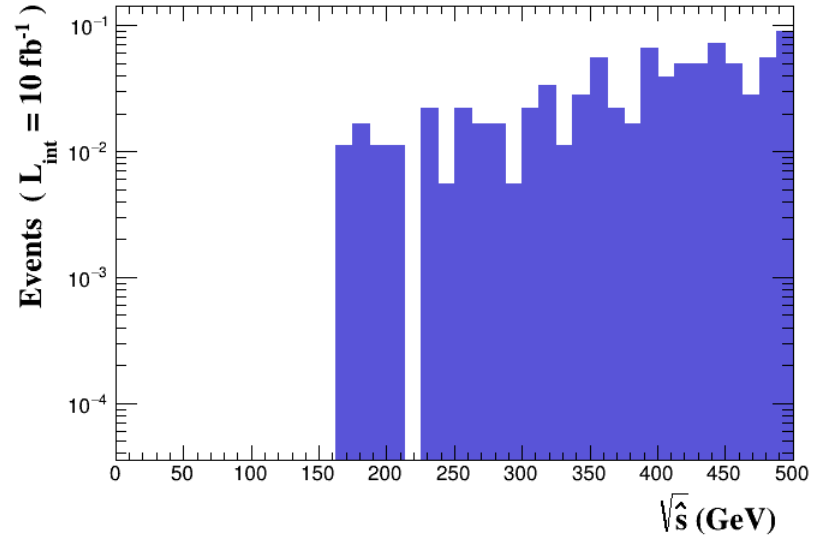


Figure 3.

3.4 Histogram 4

* Plot: PT (z[1])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	906.062	551.8	0.0	36.34

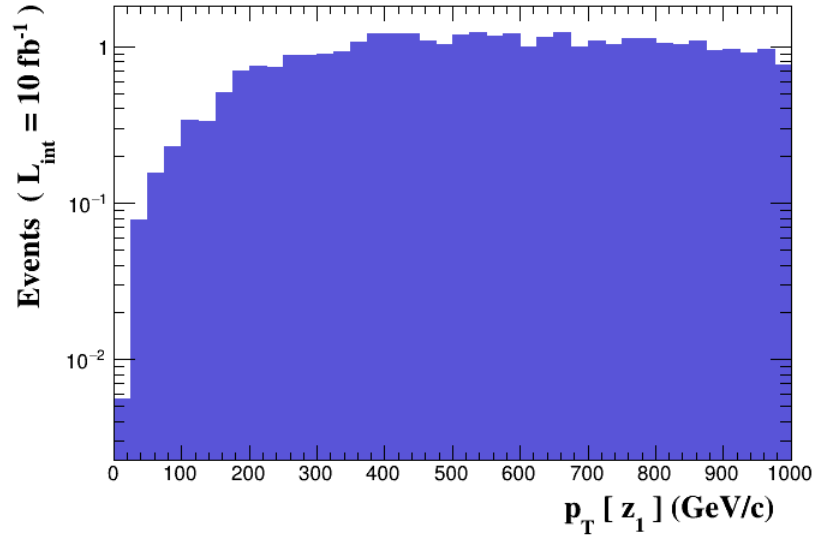


Figure 4.

3.5 Histogram 5

* Plot: ETA ($z[1]$)

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	0.00700069	1.213	0.0	0.0

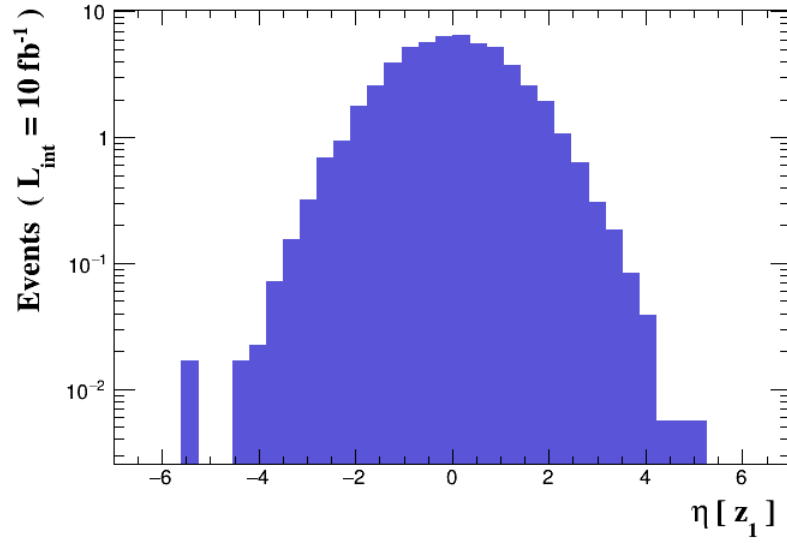


Figure 5.

3.6 Histogram 6

* Plot: PT (a[1])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	906.062	551.8	0.0	36.34

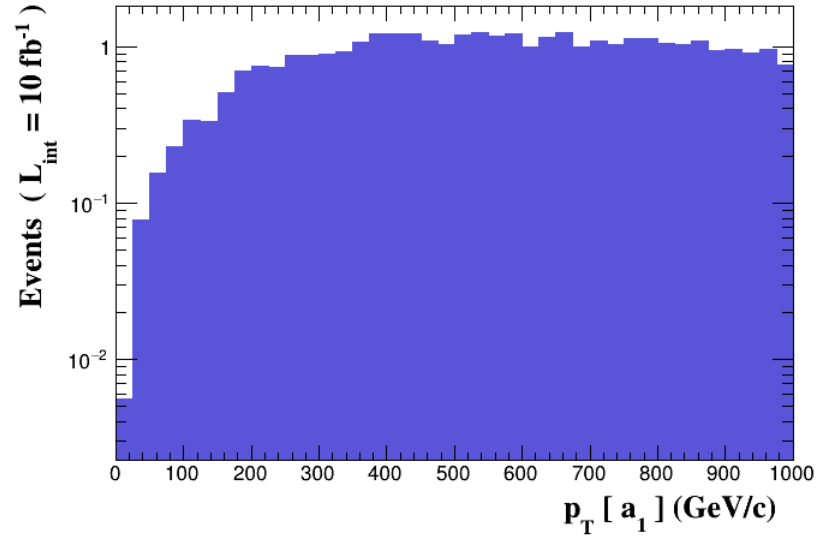


Figure 6.

3.7 Histogram 7

* Plot: ETA (a[1])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	0.0039462	1.069	0.0	0.0

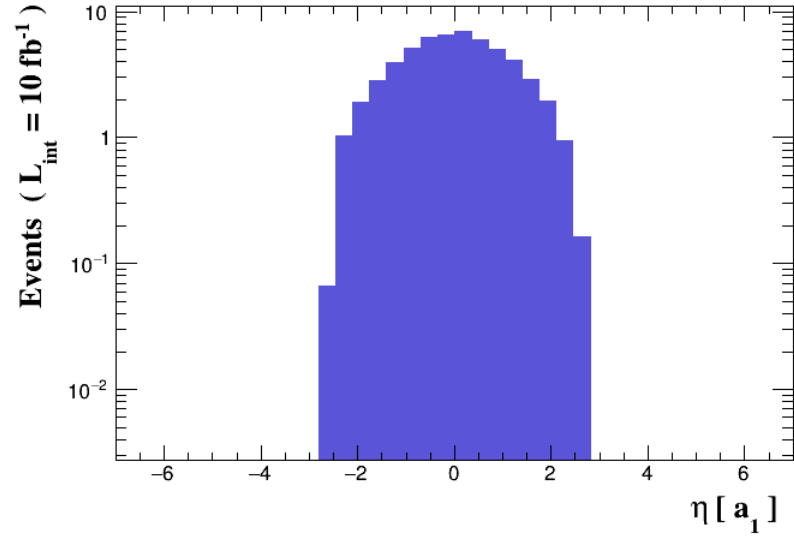


Figure 7.

3.8 Histogram 8

* Plot: $M (a_1 z_1)$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	2394.86	1240	0.0	93.81

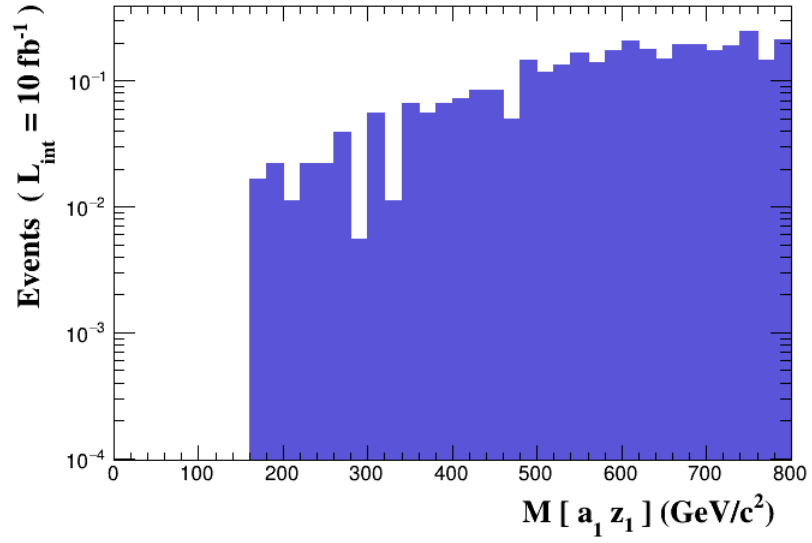


Figure 8.

3.9 Histogram 9

* Plot: DELTAR (z[1] , a[1])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	3.60168	0.5557	0.0	0.0

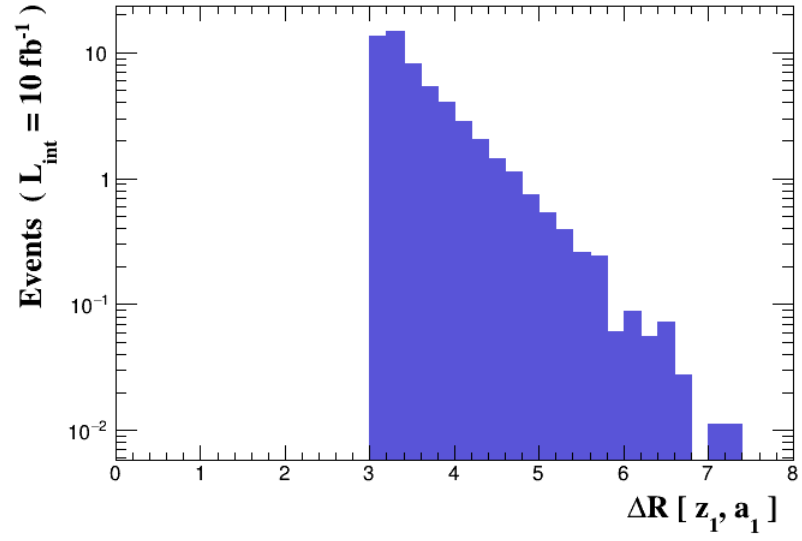


Figure 9.

3.10 Histogram 10

* Plot: PT (a[1])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	906.062	551.8	0.0	50.12

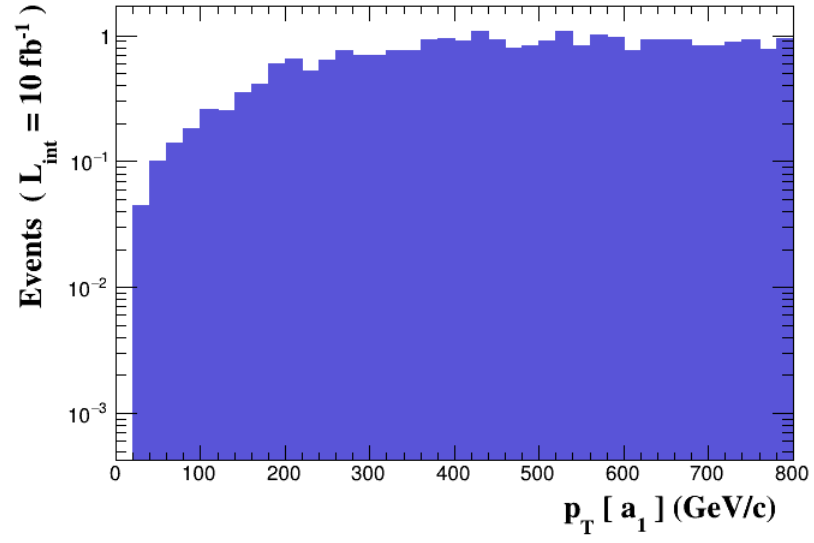


Figure 10.

3.11 Histogram 11

* Plot: ETA (a[1])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	0.0039462	1.069	0.0	0.0

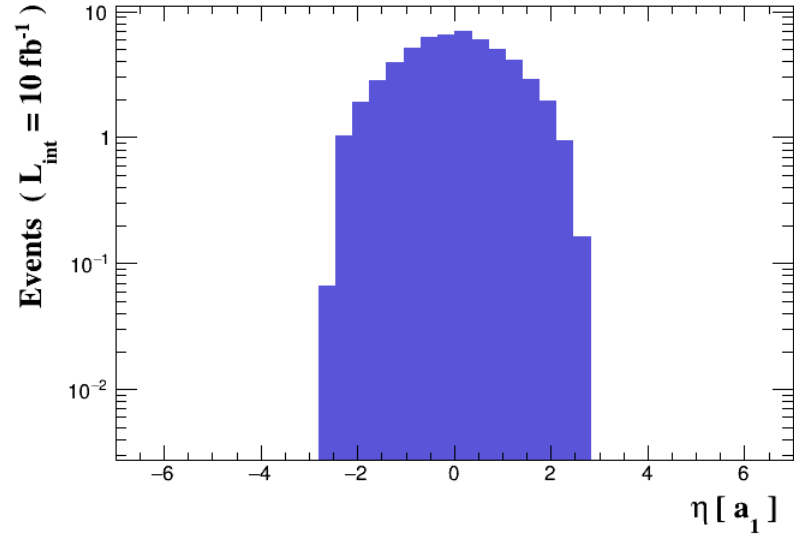


Figure 11.

3.12 Histogram 12

* Plot: PT (l-[1])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	456.537	366.2	0.0	22.87

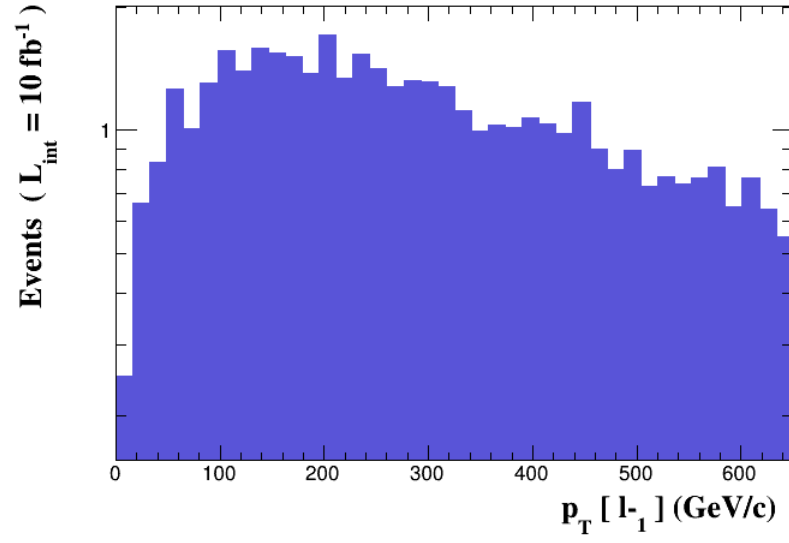


Figure 12.

3.13 Histogram 13

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

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	0.00285549	1.216	0.0	0.0

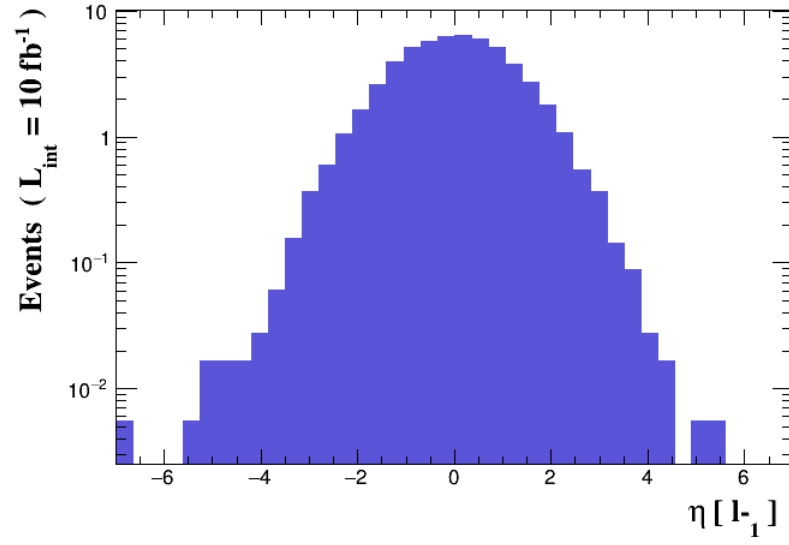


Figure 13.

3.14 Histogram 14

* Plot: PT (l+[1])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	453.268	363.8	0.0	23.14

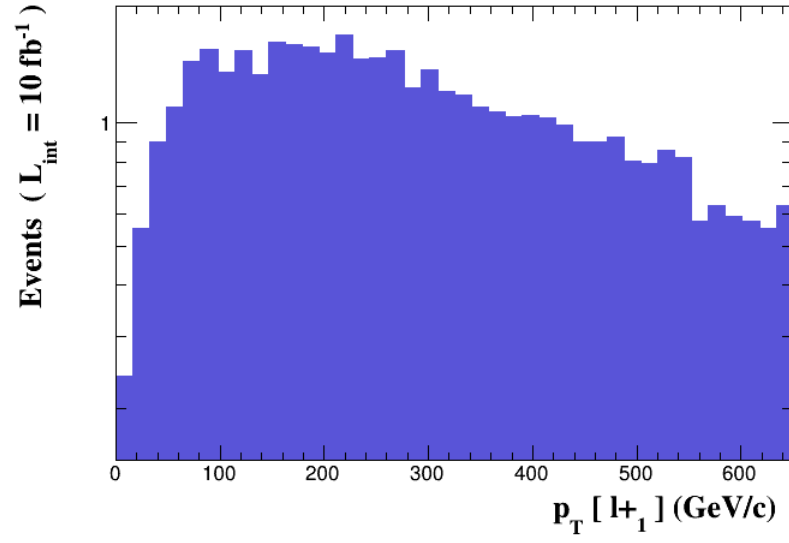


Figure 14.

3.15 Histogram 15

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

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	0.00893731	1.212	0.0	0.0

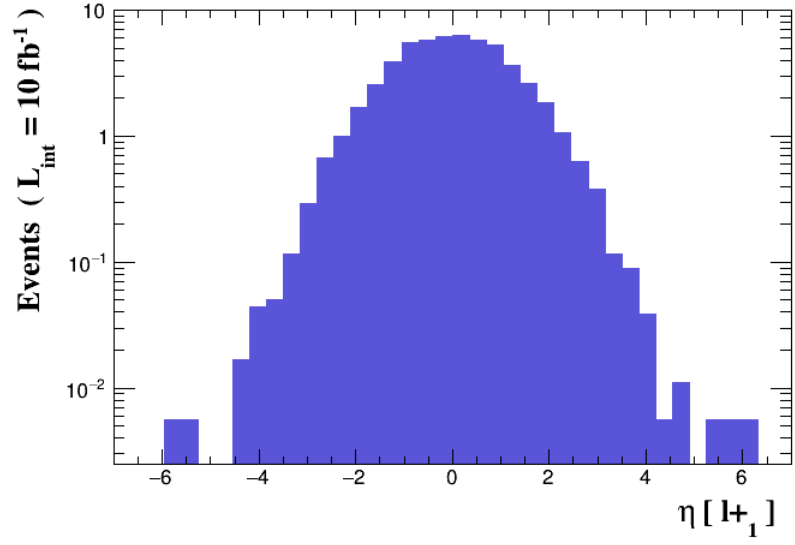


Figure 15.

3.16 Histogram 16

* Plot: $M (a_1 l_+ l_-)$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	1638.1	975.3	0.0	80.15

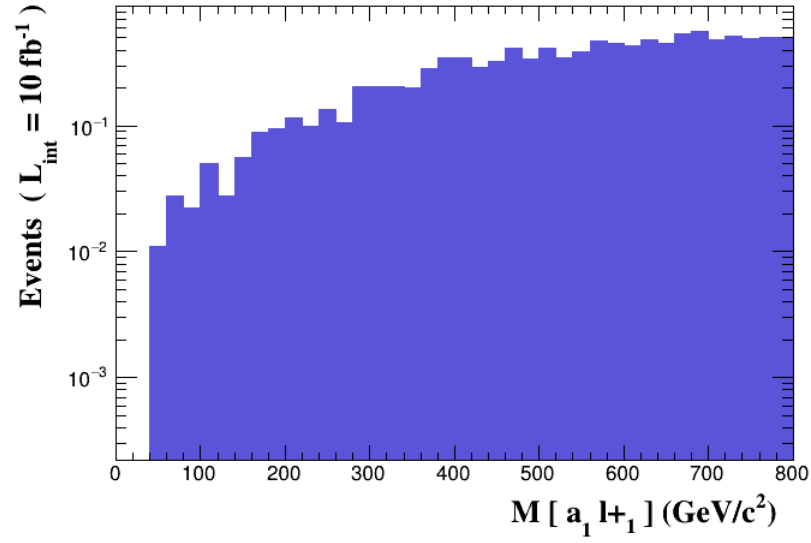


Figure 16.

3.17 Histogram 17

* Plot: $M (a_1 l_1)$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	1640.73	969.0	0.0	80.45

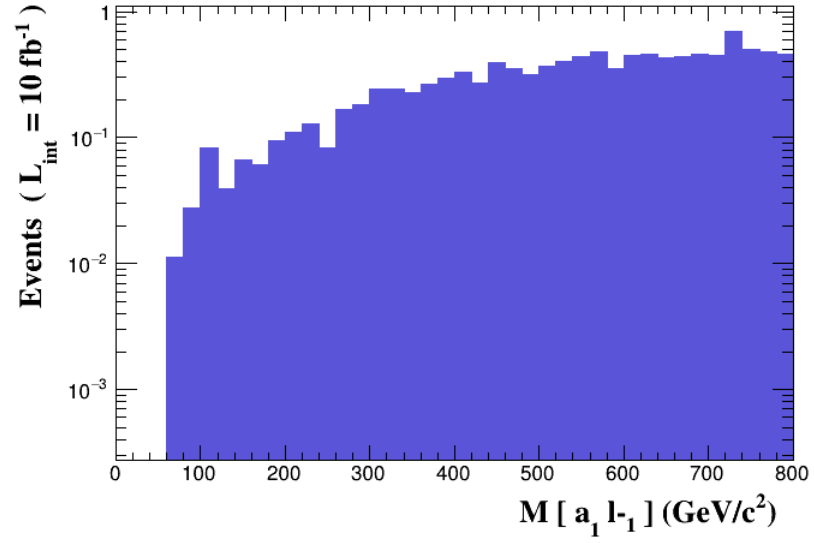


Figure 17.

3.18 Histogram 18

* Plot: $M (a_1 l_+ l_- l_1)$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	2394.86	1240	0.0	91.65

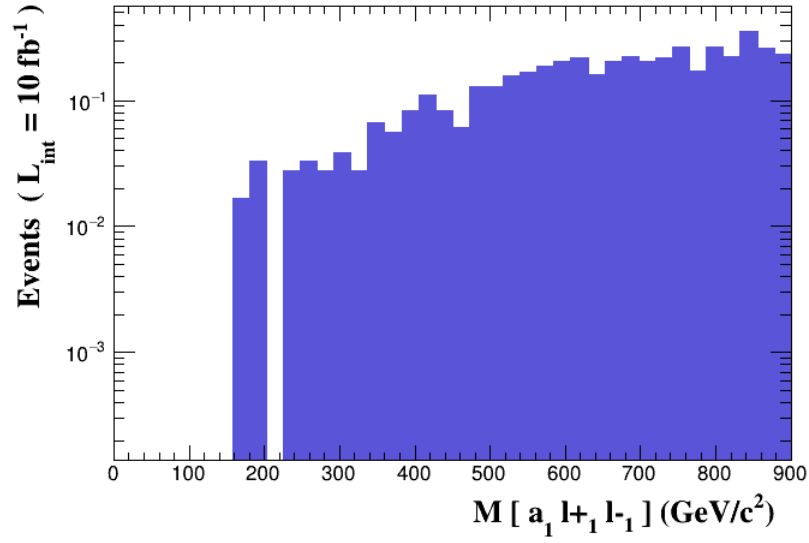


Figure 18.

3.19 Histogram 19

* Plot: $M (l^+ l^- [1] l^- [1])$

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	91.1264	5.31	0.0	0.0

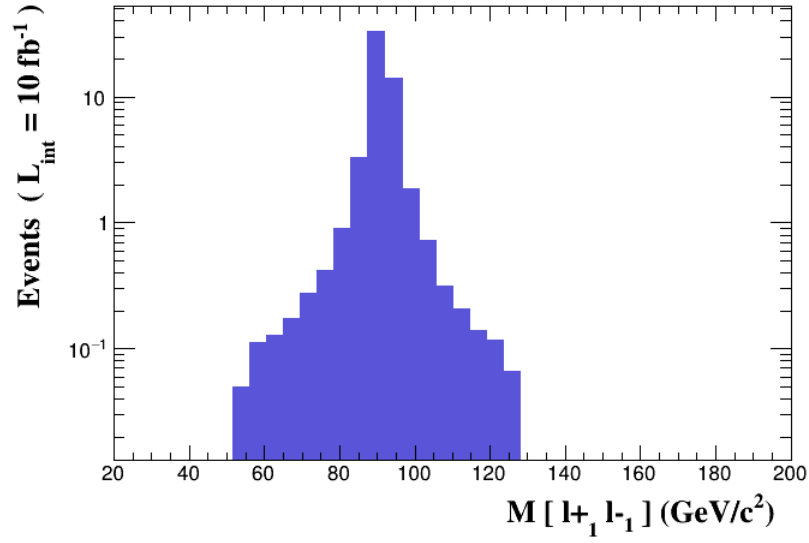


Figure 19.

3.20 Histogram 20

* Plot: DELTAR (a[1] , l+[1])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	3.50277	0.5466	0.0	0.02

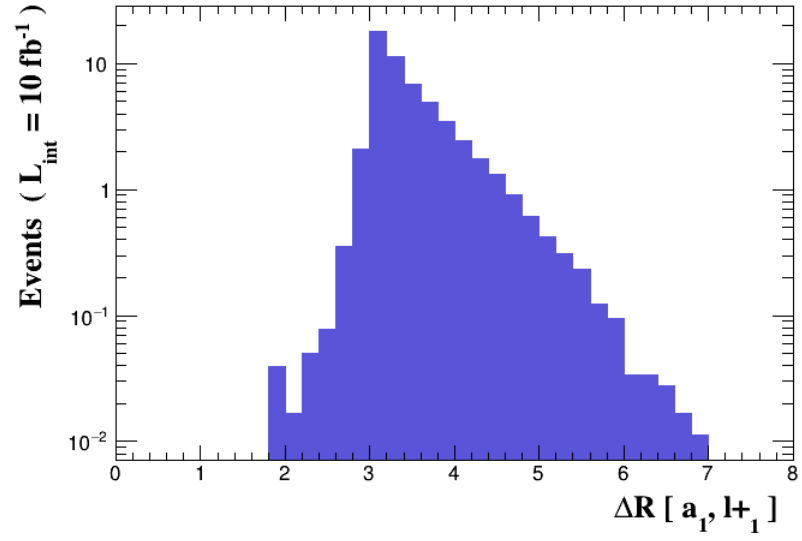


Figure 20.

3.21 Histogram 21

* Plot: DELTAR (a[1] , l-[1])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	3.50256	0.5503	0.0	0.01

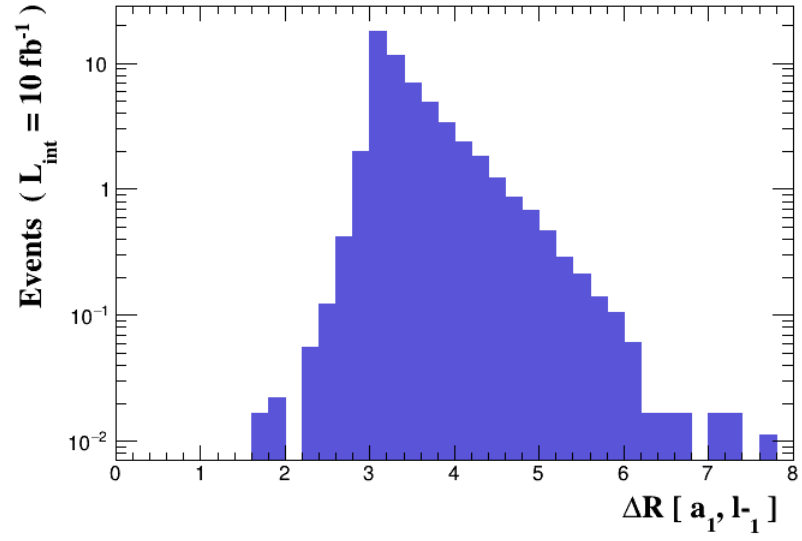


Figure 21.

3.22 Histogram 22

* Plot: DELTAR (l-[1] , l+[1])

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
unweighted_eve	55.7	1.0	0.370028	0.3569	0.0	0.01

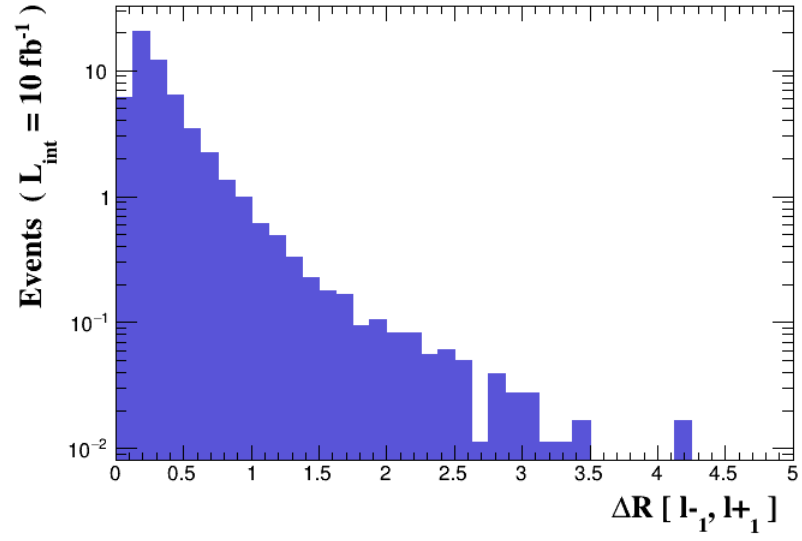


Figure 22.