The LaTeX report

Generated by root on 13 April 2021, 08:13:26

This report has been generated automatically by MadAnalysis 5.

Please cite:

> **E. Conte, B. Fuks and G. Serret**,
> *MadAnalysis 5, A User-Friendly Framework for Collider Phenomenology*,
> Comput. Phys. Commun. **184** (2013) 222-256,
> arXiv:1206.1599 [hep-ph].

To contact us:

> **http://madanalysis.irmp.ucl.ac.be**
> **ma5team@iphc.cnrs.fr**

Contents

1 Setup **2**
1.1 Command history 2
1.2 Configuration 3

2 Datasets **4**
2.1 sm 4

3 Histos and cuts **5**
3.1 Cut 1 5
3.2 Cut 2 6
3.3 Cut 3 7
3.4 Histogram 1 8
3.5 Histogram 2 9
3.6 Histogram 3 10
3.7 Cut 4 11
3.8 Cut 5 12
3.9 Cut 6 13
3.10 Cut 7 14
3.11 Cut 8 15
3.12 Histogram 4 16
3.13 Histogram 5 17
3.14 Histogram 6 18
3.15 Histogram 7 19
3.16 Histogram 8 20
3.17 Histogram 9 21
3.18 Histogram 10 22
3.19 Histogram 11 23
3.20 Histogram 12 24
3.21 Histogram 13 25
3.22 Histogram 14 26
3.23 Histogram 15 27
3.24 Histogram 16 28
3.25 Histogram 17 29
3.26 Histogram 18 30
3.27 Histogram 19 31
3.28 Histogram 20 32

4 Summary **33**
4.1 Cut-flow charts 33

1 Setup

1.1 Command history

```
ma5>
ma5>
ma5>
ma5>!printf "we will define some signal regions.  For more details please seehttps:/-
/twiki.cern.ch/twiki/pub/LHCPhysics/LHCHWGFiducialAndSTXS/simplifiedXS_VH_1_2.pdf"
ma5>define_region NoCuts
ma5>define_region NJ0_0_75
ma5>define_region NJ1_0_75
ma5>define_region NJ2_0_75
ma5>define_region NJ0_75_150
ma5>define_region NJ1_75_150
ma5>define_region NJ2_75_150
ma5>define_region NJ0_150_250
ma5>define_region NJ1_150_250
ma5>define_region NJ2_150_250
ma5>define_region NJ2_250_400
ma5>define_region NJ1_250_400
ma5>define_region NJ0_250_400
ma5>define_region NJ0_400_inf
ma5>define_region NJ1_400_inf
ma5>define_region NJ2_400_inf
ma5>!printf "* Define cutflow.  Syntax:  select <CUT> {<REGION>} "
ma5>select N (j) == 0 {NJ0_0_75 NJ0_75_150 NJ0_150_250 NJ0_250_400 NJ0_400_inf}
ma5>select N (j) == 1 {NJ1_0_75 NJ1_75_150 NJ1_150_250 NJ1_250_400 NJ1_400_inf}
ma5>select N (j) >= 2 {NJ2_0_75 NJ2_75_150 NJ2_150_250 NJ2_250_400 NJ2_400_inf}
ma5>!printf "* l is not defined in parton level so we will define it as l = l+ l-"
ma5>define l = l+ l-
ma5>plot N (j) 10 0 10 {NoCuts} [logY]
ma5>plot N (j) 10 0 10 {NJ1_0_75 NJ1_75_150 NJ1_150_250 NJ1_250_400 NJ1_400_inf} [logY]
ma5>plot N (j) 10 0 10 {NJ2_0_75 NJ2_75_150 NJ2_150_250 NJ2_250_400 NJ2_400_inf} [logY]
ma5>select vPT(l[1] l[2]) > 0 and vPT(l[1] l[2]) <= 75 {NJ0_0_75 NJ1_0_75 NJ2_0_75}
ma5>select vPT (l[1] l[2]) > 75 and vPT (l[1] l[2]) <= 150 {NJ0_75_150 NJ1_75_150 NJ2_75_150}
ma5>select vPT (l[1] l[2]) > 150 and vPT (l[1] l[2]) <= 250 {NJ0_150_250 NJ1_150_250
NJ2_150_250}
ma5>select vPT (l[1] l[2]) > 250 and vPT (l[1] l[2]) <= 400 {NJ2_250_400 NJ1_250_400
NJ0_250_400}
ma5>select vPT (l[1] l[2]) > 400 {NJ0_400_inf NJ1_400_inf NJ2_400_inf}
ma5>!printf "* Define histograms.  Syntax:  plot <OBS> (<PARTICLES>) <NBINS> <XMIN>
<XMAX> {<REGION>} [<OPT>]"
ma5>plot vPT (l[1] l[2]) 50 0 500 {NoCuts} [logY]
ma5>plot vPT (l[1] l[2]) 50 0 500 {NJ0_0_75} [logY]
ma5>plot vPT (l[1] l[2]) 50 0 500 {NJ1_0_75} [logY]
ma5>plot vPT (l[1] l[2]) 50 0 500 {NJ2_0_75} [logY]
ma5>plot vPT (l[1] l[2]) 50 0 500 {NJ0_75_150} [logY]
ma5>plot vPT (l[1] l[2]) 50 0 500 {NJ2_150_250} [logY]
ma5>plot vPT (l[1] l[2]) 50 0 500 {NJ0_250_400} [logY]
```

```
ma5>plot M (l[1] l[2] b[1] b[2]) 50 0 500 {NoCuts} [logY]
ma5>plot M (l[1] l[2] b[1] b[2]) 50 0 500 {NJ2_0_75} [logY]
ma5>plot M (l[1] l[2] b[1] b[2]) 50 0 500 {NJ2_150_250} [logY]
ma5>plot M (l[1] l[2] b[1] b[2]) 50 0 500 {NJ2_250_400} [logY]
ma5>plot M (l[1] l[2] b[1] b[2]) 50 0 500 {NJ2_400_inf} [logY]
ma5>!printf "* Lets define higgs and plot the mass with respect to the generated higgs
boson.  Note that this assumes that you generated 'p p > h l+ l-' if you generated
'p p > b b  l+ l-' instead this will not capture the interstate higgs boson."
ma5>define higgs = 25
ma5>plot M (l[1] l[2] higgs) 50 0 500 {NoCuts} [logY]
ma5>plot M (l[1] l[2] higgs) 50 0 500 {NJ2_0_75} [logY]
ma5>plot M (l[1] l[2] higgs) 50 0 500 {NJ2_150_250} [logY]
ma5>plot M (l[1] l[2] higgs) 50 0 500 {NJ2_250_400} [logY]
ma5>plot M (l[1] l[2] higgs) 50 0 500 {NJ2_400_inf} [logY]
ma5>!printf "you need to import your sample by typingimport /PATH/TO/MY/SAMPLE/MYSAMPLE.lhe.gz
as MY_FANCY_SMP_NAMEthat 'MY_FANCY_SMP_NAME' is a tag which separates your samples,
you can add multiple samples with different tags"
ma5>import pp_hee_SM/Events/run_01/unweighted_events.lhe.gz as SM
ma5>submit SM_parton_analysis
```

1.2 Configuration

- MadAnalysis version 1.9.19 (2021/03/24).
- Histograms given for an integrated luminosity of 10fb^{-1}.

2 Datasets

2.1 sm

- Sample consisting of: signal events.
- Generated events: 10000 events.
- Normalization to the luminosity: 129+/- 1 events.
- Ratio (event weight): 0.013 .

Path to the event file	Nr. of events	Cross section (pb)	Negative wgts (%)
pp_hee_SM/Events/run_01/-unweighted_events.lhe.gz	10000	0.0129 @ 0.34%	0.0

3 Histos and cuts

3.1 Cut 1

*** Cut: select N (j) = 0.0**
*** Regions:** NJ0_0_75 , NJ0_75_150 , NJ0_150_250 , NJ0_250_400 , NJ0_400_inf

Region: "NJ0_0_75"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	129.146 +/- 0.435	0.0 +/- 0.0	1.0	1.0

Region: "NJ0_75_150"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	129.146 +/- 0.435	0.0 +/- 0.0	1.0	1.0

Region: "NJ0_150_250"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	129.146 +/- 0.435	0.0 +/- 0.0	1.0	1.0

Region: "NJ0_250_400"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	129.146 +/- 0.435	0.0 +/- 0.0	1.0	1.0

Region: "NJ0_400_inf"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	129.146 +/- 0.435	0.0 +/- 0.0	1.0	1.0

3.2 Cut 2

*** Cut: select N (j) = 1.0**
*** Regions:** NJ1_0_75 , NJ1_75_150 , NJ1_150_250 , NJ1_250_400 , NJ1_400_inf

Region: "NJ1_0_75"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	129.146 +/- 0.435	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ1_75_150"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	129.146 +/- 0.435	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ1_150_250"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	129.146 +/- 0.435	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ1_250_400"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	129.146 +/- 0.435	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ1_400_inf"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	129.146 +/- 0.435	0.0 +/- 0.0	0.0 +/- 0.0

3.3 Cut 3

*** Cut: select N (j) >= 2.0**
*** Regions:** NJ2_0_75 , NJ2_75_150 , NJ2_150_250 , NJ2_250_400 , NJ2_400_inf

Region: "NJ2_0_75"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	129.146 +/- 0.435	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ2_75_150"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	129.146 +/- 0.435	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ2_150_250"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	129.146 +/- 0.435	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ2_250_400"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	129.146 +/- 0.435	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ2_400_inf"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	129.146 +/- 0.435	0.0 +/- 0.0	0.0 +/- 0.0

3.4 Histogram 1

*** Plot: N (j)**
*** Regions:** NoCuts

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	129	1.0	0.0	0.0	0.0	0.0

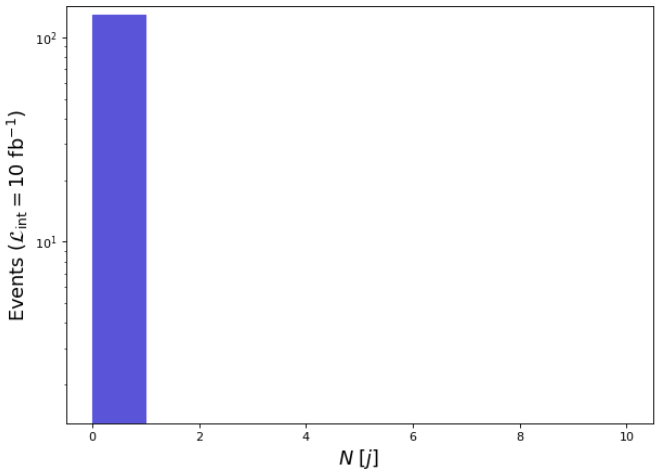


Figure 1.

3.5 Histogram 2

*** Plot: N (j)**
*** Regions:** NJ1_0_75 , NJ1_75_150 , NJ1_150_250 , NJ1_250_400 , NJ1_400_inf

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

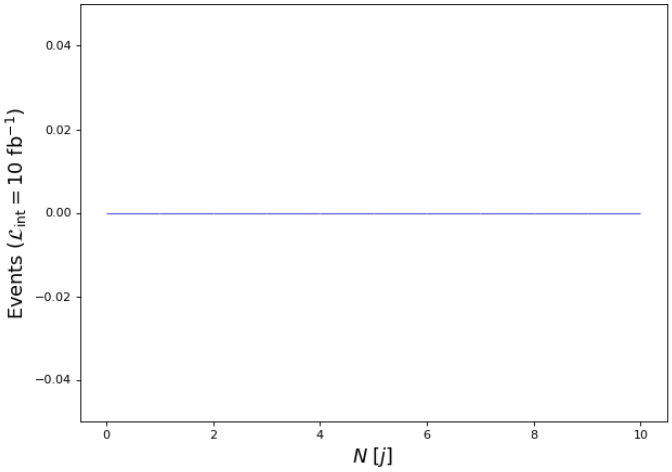


Figure 2.

3.6 Histogram 3

*** Plot: N (j)**
*** Regions:** NJ2_0_75 , NJ2_75_150 , NJ2_150_250 , NJ2_250_400 , NJ2_400_inf

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

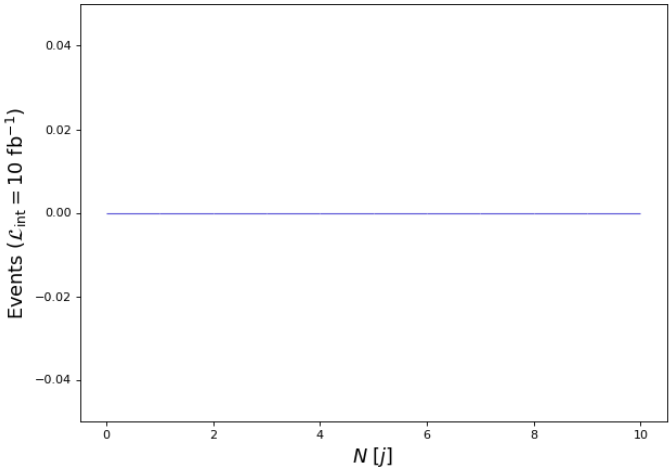


Figure 3.

3.7 Cut 4

*** Cut: select 0.0 > PT <= 75.0**
*** Regions:** NJ0_0_75 , NJ1_0_75 , NJ2_0_75

Region: "NJ0_0_75"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	65.22 +/- 5.69	63.93 +/- 5.69	0.505 +/- 0.044	0.505 +/- 0.044

Region: "NJ1_0_75"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ2_0_75"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0

3.8 Cut 5

*** Cut: select 75.0 > PT <= 150.0**
*** Regions:** NJ0_75_150 , NJ1_75_150 , NJ2_75_150

Region: "NJ0_75_150"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	45.16 +/- 5.42	83.98 +/- 5.43	0.350 +/- 0.042	0.350 +/- 0.042

Region: "NJ1_75_150"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ2_75_150"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0

3.9 Cut 6

*** Cut: select 150.0 > PT <= 250.0**
*** Regions:** NJ0_150_250 , NJ1_150_250 , NJ2_150_250

Region: "NJ0_150_250"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	14.36 +/- 3.57	114.78 +/- 3.59	0.1112 +/- 0.0277	0.1112 +/- 0.0277

Region: "NJ1_150_250"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ2_150_250"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0

3.10 Cut 7

*** Cut: select 250.0 > PT <= 400.0**
*** Regions:** NJ2_250_400 , NJ1_250_400 , NJ0_250_400

Region: "NJ2_250_400"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ1_250_400"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ0_250_400"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	3.85 +/- 1.93	125.30 +/- 1.98	0.030 +/- 0.015	0.030 +/- 0.015

3.11 Cut 8

*** Cut: select PT (l[1] l[2]) > 400.0**
*** Regions:** NJ0_400_inf , NJ1_400_inf , NJ2_400_inf

Region: "NJ0_400_inf"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.555 +/- 0.744	128.590 +/- 0.861	0.0043 +/- 0.0058	0.0043 +/- 0.0058

Region: "NJ1_400_inf"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0

Region: "NJ2_400_inf"				
Dataset	Events kept: K	Rejected events: R	Efficiency: K / (K + R)	Cumul. efficiency: K / Initial
sm	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0	0.0 +/- 0.0

3.12 Histogram 4

*** Plot: PT (l[1] l[2])**
*** Regions:** NoCuts

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	129	1.0	90.7539	67.63	0.0	0.05

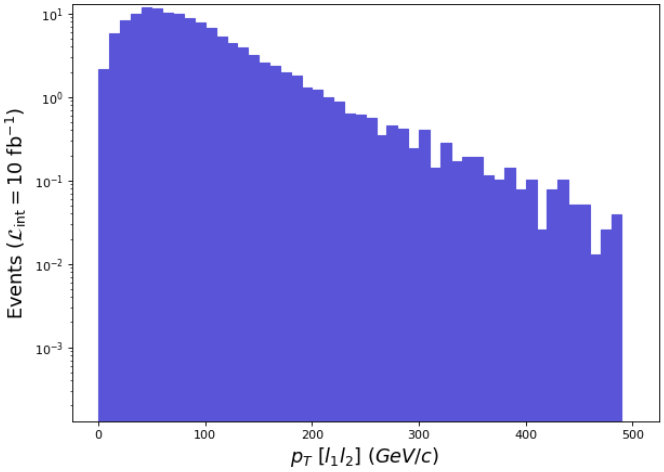


Figure 4.

3.13 Histogram 5

*** Plot: PT (l[1] l[2])**
*** Regions:** NJ0_0_75

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	65.2	1.0	44.1772	18.39	0.0	0.0

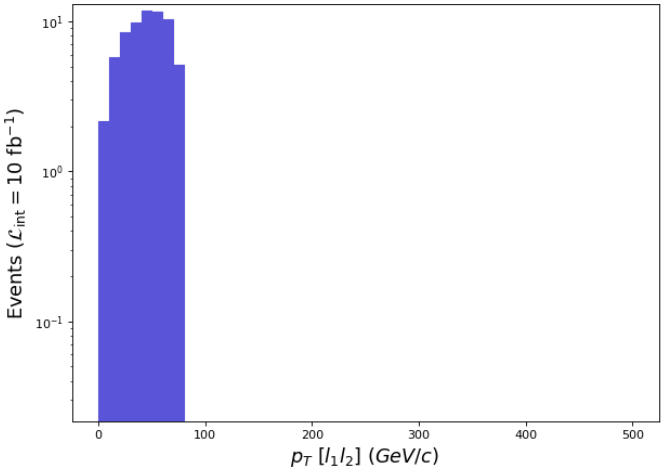


Figure 5.

3.14 Histogram 6

*** Plot: PT (l[1] l[2])**
*** Regions:** NJ1_0_75

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

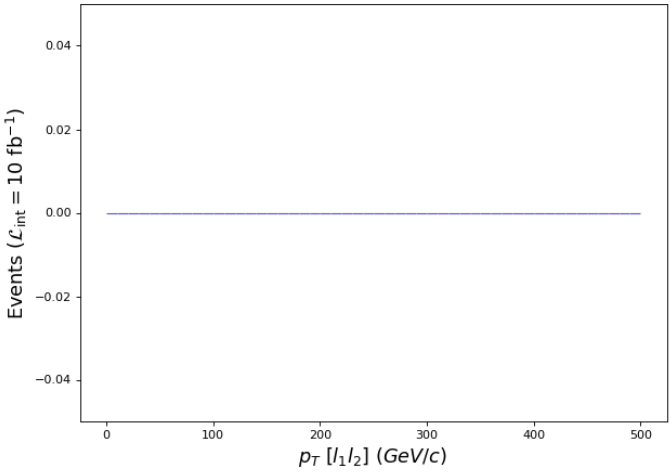


Figure 6.

3.15 Histogram 7

*** Plot: PT (l[1] l[2])**
*** Regions:** NJ2_0_75

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

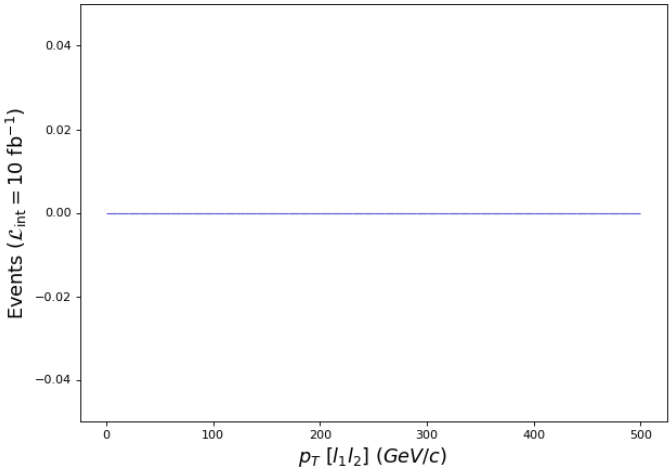


Figure 7.

3.16 Histogram 8

*** Plot: PT (l[1] l[2])**
*** Regions:** NJ0_75_150

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	45.2	1.0	104.84	20.63	0.0	0.0

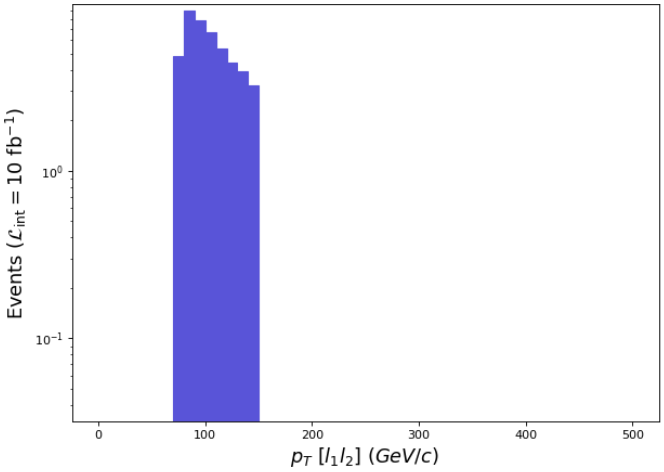


Figure 8.

3.17 Histogram 9

*** Plot: PT (l[1] l[2])**
*** Regions:** NJ2_150_250

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

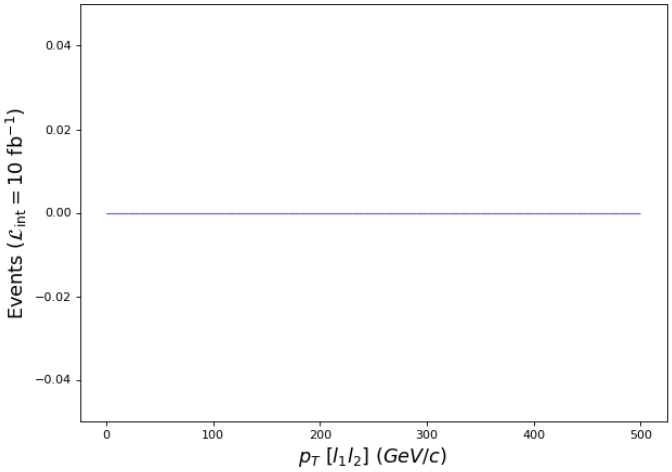


Figure 9.

3.18 Histogram 10

*** Plot: PT (l[1] l[2])**
*** Regions:** NJ0_250_400

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	3.85	1.0	303.882	40.07	0.0	0.0

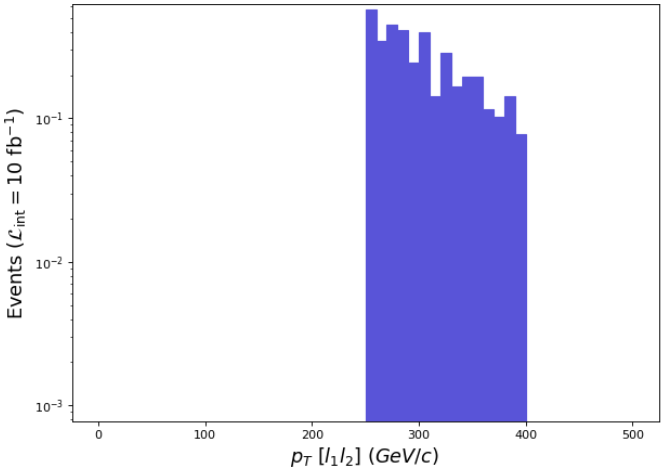


Figure 10.

3.19 Histogram 11

*** Plot: M (b[1] b[2] l[1] l[2])**
*** Regions:** NoCuts

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

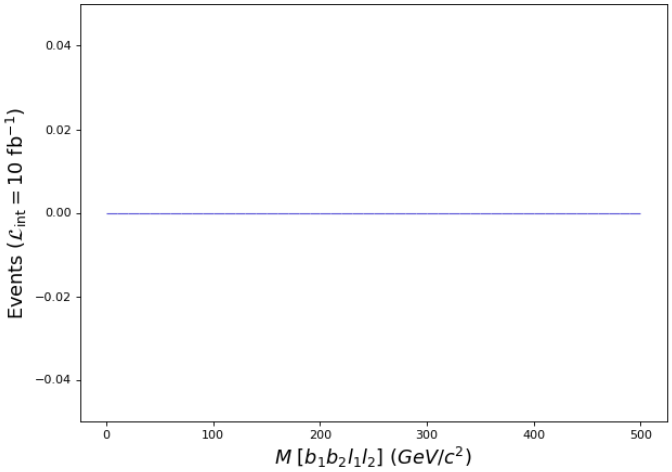


Figure 11.

3.20 Histogram 12

*** Plot: M (b[1] b[2] l[1] l[2])**
*** Regions:** NJ2_0_75

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

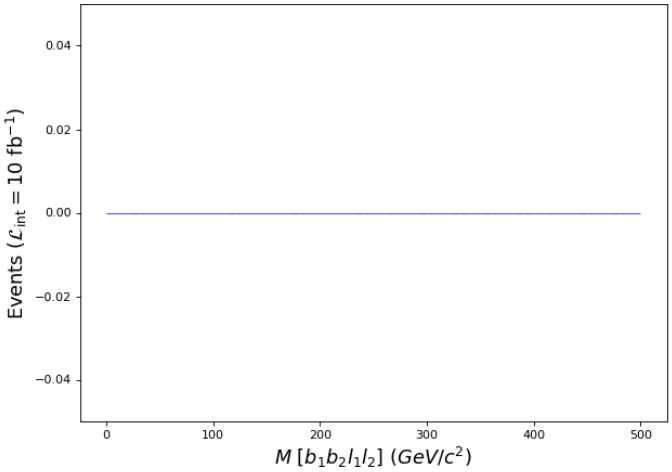


Figure 12.

3.21 Histogram 13

*** Plot: M (b[1] b[2] l[1] l[2])**
*** Regions:** NJ2_150_250

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

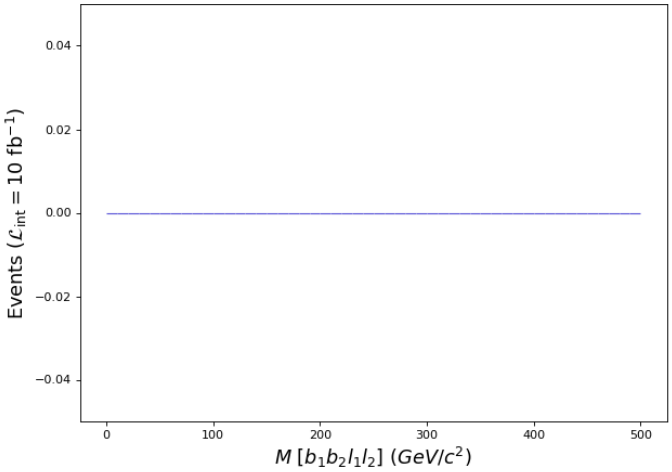


Figure 13.

3.22 Histogram 14

*** Plot: M (b[1] b[2] l[1] l[2])**
*** Regions:** NJ2_250_400

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

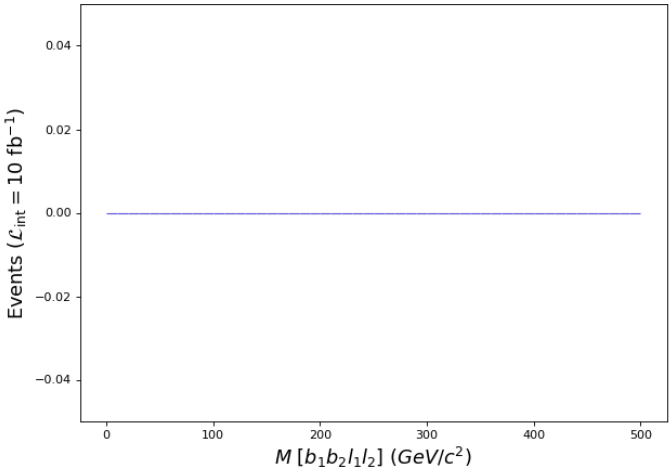


Figure 14.

3.23 Histogram 15

*** Plot: M (b[1] b[2] l[1] l[2])**
*** Regions:** NJ2_400_inf

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

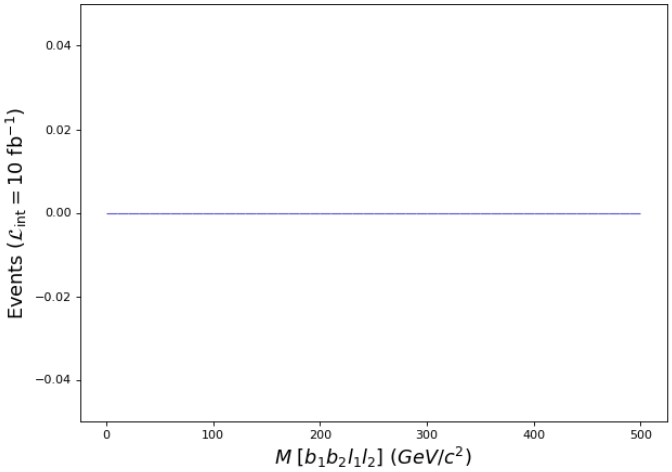


Figure 15.

3.24 Histogram 16

*** Plot: M (higgs l[1] l[2])**
*** Regions:** NoCuts

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	129	1.0	319.016	113.7	0.0	6.72

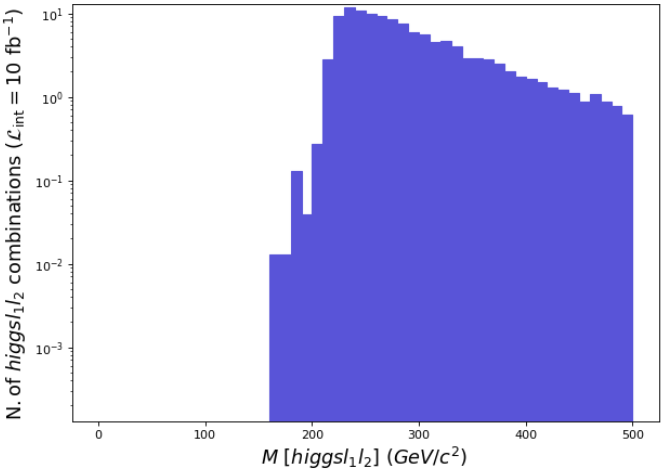


Figure 16.

3.25 Histogram 17

*** Plot: M (higgs l[1] l[2])**
*** Regions:** NJ2_0_75

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

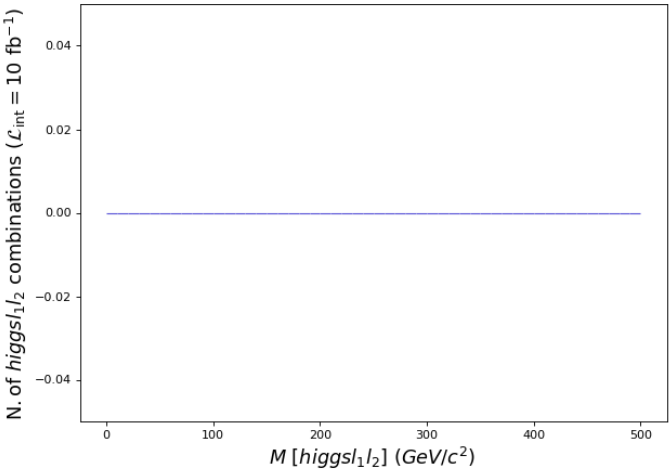


Figure 17.

3.26 Histogram 18

*** Plot: M (higgs l[1] l[2])**
*** Regions:** NJ2_150_250

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

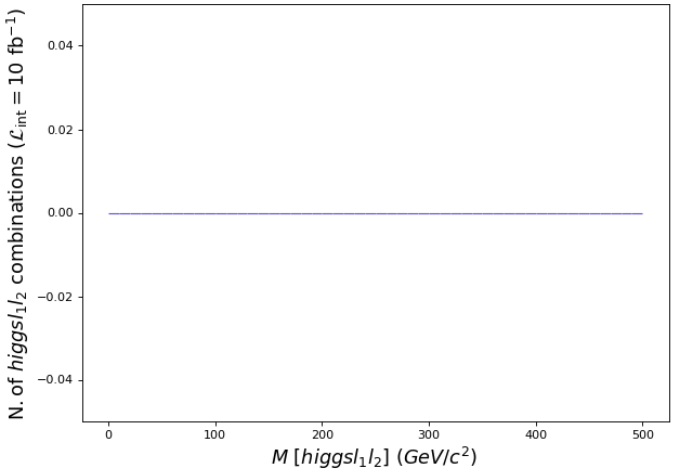


Figure 18.

3.27 Histogram 19

*** Plot: M (higgs l[1] l[2])**
*** Regions:** NJ2_250_400

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

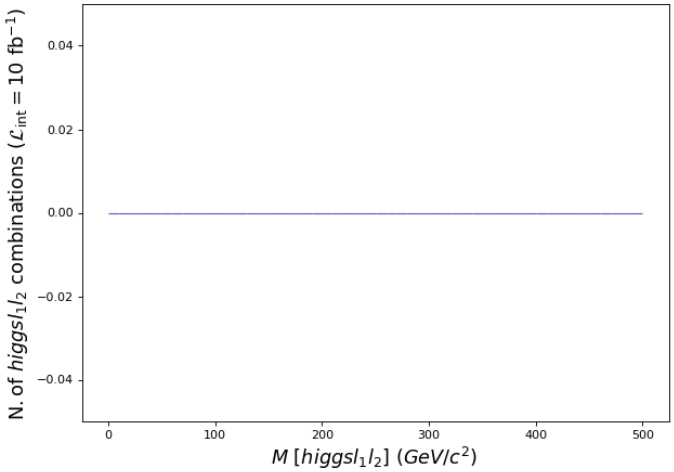


Figure 19.

3.28 Histogram 20

*** Plot: M (higgs l[1] l[2])**
*** Regions:** NJ2_400_inf

Dataset	Integral	Entries per event	Mean	RMS	% underflow	% overflow
sm	0.0 +/- 0.0	0.	0.0	0.0	0.0	0.0

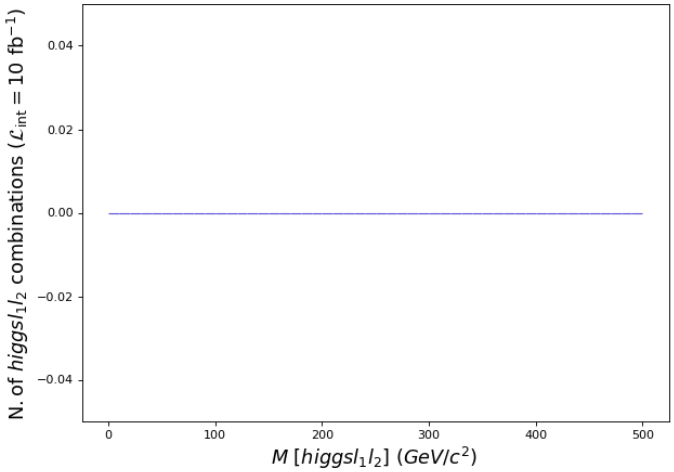


Figure 20.

4 Summary

4.1 Cut-flow charts

- How to compare signal (S) and background (B): S/sqrt(S+B) .
- Object definition selections are indicated in cyan.
- Reject and select are indicated by 'REJ' and 'SEL' respectively

Region: "NoCuts"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		

Region: "NJ0_0_75"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) = 0.0	129.146 +/- 0.435		
SEL: 0.0 > PT <= 75.0	65.22 +/- 5.69		

Region: "NJ1_0_75"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) = 1.0	0.0 +/- 0.0		
SEL: 0.0 > PT <= 75.0	0.0 +/- 0.0		

Region: "NJ2_0_75"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) >= 2.0	0.0 +/- 0.0		
SEL: 0.0 > PT <= 75.0	0.0 +/- 0.0		

Region: "NJ0_75_150"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) = 0.0	129.146 +/- 0.435		
SEL: 75.0 > PT <= 150.0	45.16 +/- 5.42		

Region: "NJ1_75_150"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) = 1.0	0.0 +/- 0.0		
SEL: 75.0 > PT <= 150.0	0.0 +/- 0.0		

Region: "NJ2_75_150"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) >= 2.0	0.0 +/- 0.0		
SEL: 75.0 > PT <= 150.0	0.0 +/- 0.0		

Region: "NJ0_150_250"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) = 0.0	129.146 +/- 0.435		
SEL: 150.0 > PT <= 250.0	14.36 +/- 3.57		

Region: "NJ1_150_250"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) = 1.0	0.0 +/- 0.0		
SEL: 150.0 > PT <= 250.0	0.0 +/- 0.0		

Region: "NJ2_150_250"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) >= 2.0	0.0 +/- 0.0		
SEL: 150.0 > PT <= 250.0	0.0 +/- 0.0		

Region: "NJ2_250_400"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) >= 2.0	0.0 +/- 0.0		
SEL: 250.0 > PT <= 400.0	0.0 +/- 0.0		

Region: "NJ1_250_400"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) = 1.0	0.0 +/- 0.0		
SEL: 250.0 > PT <= 400.0	0.0 +/- 0.0		

Region: "NJ0_250_400"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) = 0.0	129.146 +/- 0.435		
SEL: 250.0 > PT <= 400.0	3.85 +/- 1.93		

Region: "NJ0_400_inf"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) = 0.0	129.146 +/- 0.435		
SEL: PT (l[1] l[2]) > 400.0	0.555 +/- 0.744		

Region: "NJ1_400_inf"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) = 1.0	0.0 +/- 0.0		
SEL: PT (l[1] l[2]) > 400.0	0.0 +/- 0.0		

Region: "NJ2_400_inf"			
Cuts	Signal (S)	Background (B)	S vs B
Initial (no cut)	129.146 +/- 0.435		
SEL: N (j) >= 2.0	0.0 +/- 0.0		
SEL: PT (l[1] l[2]) > 400.0	0.0 +/- 0.0		