

atlas_1404_2500 CutFlow

ATLAS

atlas_1404_2500

Monojet

Energy: 8 TeV

Luminosity: 20.1 fb⁻¹

Montecarlo: Herwig++

Signal region	SR3b	
Process	gluino-mediated $\tilde{t} \rightarrow c\tilde{\chi}_1^0$	
Point	$m(\tilde{g}) = 700$ GeV, $m(\tilde{t}) = 400$ GeV, $m(\tilde{\chi}_1^0) = 380$ GeV	
Source	ATLAS	CheckMATE
Generated events	20000	20000
≥ 2 signal leptons	512	559
Trigger	492	559
$m_{\ell\ell} > 12$ GeV	490	557
≥ 2 same sign leptons	245.3	270
≥ 5 jets	17.7	11
3 b jets	2.7	1
$m_{\text{eff}} > 350$ GeV	2.7	1

Table 1: Cutflow validation for atlas_1407.0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb⁻¹. Final error is Monte-Carlo events only.

Signal region	SR1b	
Process	gluino-mediated $\tilde{t} \rightarrow c\tilde{\chi}_1^0$	
Point	$m(\tilde{g}) = 700$ GeV, $m(\tilde{t}) = 400$ GeV, $m(\tilde{\chi}_1^0) = 380$ GeV	
Source	ATLAS	CheckMATE
Generated events	20000	20000
≥ 2 signal leptons	512	559
Trigger	492	559
$m_{\ell\ell} > 12$ GeV	490	557
2 same sign leptons	245.6	270
≥ 3 jets	94.7	105
$\geq 1b$ jets	84	87
$E_T^{\text{miss}} \geq 150$ GeV	57.4	56
$m_T > 100$ GeV	51.1	54
$m_{\text{eff}} > 700$ GeV	37.3	33

Table 2: Cutflow validation for atlas_1407.0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb⁻¹. Final error is Monte-Carlo events only.

Signal region	SR0b	
Process	gluino-mediated $\tilde{t} \rightarrow c\tilde{\chi}_1^0$	
Point	$m(\tilde{g}) = 700 \text{ GeV}, \quad m(\tilde{t}) = 400 \text{ GeV}, \quad m(\tilde{\chi}_1^0) = 380 \text{ GeV}$	
Source	ATLAS	CheckMATE
Generated events	20000	20000
≥ 2 signal leptons	512	559
Trigger	492	559
$m_{\ell\ell} > 12 \text{ GeV}$	490	557
2 same sign leptons	242.6	270
≥ 3 jets	94.7	105
≥ 0 b jets	10.8	18
$E_T^{miss} \geq 150 \text{ GeV}$	2.4	9
$m_T > 100 \text{ GeV}$	2.4	7
$m_{\text{eff}} > 700 \text{ GeV}$	2.4	7

Table 3: Cutflow validation for atlas_1407_0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb^{-1} . Final error is Monte-Carlo events only.

Signal region	SR3Llow	
Process	gluino-mediated $\tilde{t} \rightarrow c\tilde{\chi}_1^0$	
Point	$m(\tilde{g}) = 700 \text{ GeV}, \quad m(\tilde{t}) = 400 \text{ GeV}, \quad m(\tilde{\chi}_1^0) = 380 \text{ GeV}$	
Source	ATLAS	CheckMATE
Generated events	20000	20000
≥ 2 signal leptons	512	559
Trigger	492	559
$m_{\ell\ell} > 12 \text{ GeV}$	490	557
≥ 3 leptons	0	0
≥ 4 jets	0	0
Z veto	0	0
$50 \text{ GeV} \leq E_T^{miss} \leq 150 \text{ GeV}$	0	0
$m_{\text{eff}} > 400 \text{ GeV}$	0	0

Table 4: Cutflow validation for atlas_1407_0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb^{-1} . Final error is Monte-Carlo events only.

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Signal region	SR3Lhigh	
Process	gluino-mediated $\tilde{t} \rightarrow c\tilde{\chi}_1^0$	
Point	$m(\tilde{g}) = 700 \text{ GeV}, \quad m(\tilde{t}) = 400 \text{ GeV}, \quad m(\tilde{\chi}_1^0) = 380 \text{ GeV}$	
Source	ATLAS	CheckMATE
Generated events	20000	20000
≥ 2 signal leptons	512	559
Trigger	492	559
$m_{\ell\ell} > 12 \text{ GeV}$	490	557
≥ 3 leptons	0	0
≥ 4 jets	0	0
$E_T^{\text{miss}} \geq 150 \text{ GeV}$	0	0
$m_{\text{eff}} > 400 \text{ GeV}$	0	0

Table 5: Cutflow validation for atlas_1407_0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb^{-1} . Final error is Monte-Carlo events only.

Signal region	SR3b	
Process	Direct sbottom production $\tilde{b} \rightarrow t\tilde{\chi}_1^\pm$	
Point	$m(\tilde{b}) = 450 \text{ GeV}, \quad m(\tilde{\chi}^\pm) = 200 \text{ GeV}, \quad m(\tilde{\chi}_1^0) = 60 \text{ GeV}$	
Source	ATLAS	CheckMATE
Generated events	20000	20000
≥ 2 signal leptons	349.6	369
Trigger	333.3	369
$m_{\ell\ell} > 12 \text{ GeV}$	331.9	367
≥ 2 same sign leptons	139.2	146
≥ 5 jets	39.8	39
3 b jets	3.9	4
$m_{\text{eff}} > 350 \text{ GeV}$	3.9	4

Table 6: Cutflow validation for atlas_1407_0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb^{-1} . Final error is Monte-Carlo events only.

Signal region	SR1b	
Process	Direct sbottom production $\tilde{b} \rightarrow t\tilde{\chi}_1^\pm$	
Point	$m(\tilde{b}) = 450$ GeV, $m(\tilde{\chi}^\pm) = 200$ GeV, $m(\tilde{\chi}_1^0) = 60$ GeV	
Source	ATLAS	CheckMATE
Generated events	20000	20000
≥ 2 signal leptons	349.6	369
Trigger	333.3	369
$m_{\ell\ell} > 12$ GeV	331.9	367
2 same sign leptons	96.4	103
≥ 3 jets	84.1	88
$\geq 1b$ jets	68.4	72
$E_T^{miss} \geq 150$ GeV	22.6	21
$m_T > 100$ GeV	17.1	16
$m_{\text{eff}} > 700$ GeV	10.9	9.8

Table 7: Cutflow validation for atlas_1407_0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb^{-1} . Final error is Monte-Carlo events only.

Signal region	SR0b	
Process	Direct sbottom production $\tilde{b} \rightarrow t\tilde{\chi}_1^\pm$	
Point	$m(\tilde{b}) = 450$ GeV, $m(\tilde{\chi}^\pm) = 200$ GeV, $m(\tilde{\chi}_1^0) = 60$ GeV	
Source	ATLAS	CheckMATE
Generated events	20000	20000
≥ 2 signal leptons	349.6	369
Trigger	333.3	369
$m_{\ell\ell} > 12$ GeV	331.9	367
2 same sign leptons	96.4	103
≥ 3 jets	84.1	88
$\geq 0b$ jets	15.6	16
$E_T^{miss} \geq 150$ GeV	5.1	5
$m_T > 100$ GeV	3.7	3.8
$m_{\text{eff}} > 700$ GeV	3.7	3.8

Table 8: Cutflow validation for atlas_1407_0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb^{-1} . Final error is Monte-Carlo events only.

Signal region	SR3Llow	
Process	Direct sbottom production $\tilde{b} \rightarrow t\tilde{\chi}_1^\pm$	
Point	$m(\tilde{b}) = 450$ GeV, $m(\tilde{\chi}^\pm) = 200$ GeV, $m(\tilde{\chi}_1^0) = 60$ GeV	
Source	ATLAS	CheckMATE
Generated events	20000	20000
≥ 2 signal leptons	349.6	369
Trigger	333.3	369
$m_{\ell\ell} > 12$ GeV	331.9	367
≥ 3 leptons	38.9	43
≥ 4 jets	11.6	14
Z veto	10	13
$50 \text{ GeV} \leq E_T^{miss} \leq 150$ GeV	4.5	7.4
$m_{\text{eff}} > 400$ GeV	4.4	7.4

Table 9: Cutflow validation for atlas_1407_0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb^{-1} . Final error is Monte-Carlo events only.

Signal region	SR3Lhigh	
Process	Direct sbottom production $\tilde{b} \rightarrow t\tilde{\chi}_1^\pm$	
Point	$m(\tilde{b}) = 450$ GeV, $m(\tilde{\chi}^\pm) = 200$ GeV, $m(\tilde{\chi}_1^0) = 60$ GeV	
Source	ATLAS	CheckMATE
Generated events	20000	20000
≥ 2 signal leptons	349.6	369
Trigger	333.3	369
$m_{\ell\ell} > 12$ GeV	331.9	367
≥ 3 leptons	38.9	43
≥ 4 jets	14	13
$E_T^{miss} \geq 150$ GeV	5	4
$m_{\text{eff}} > 400$ GeV	5	4

Table 10: Cutflow validation for atlas_1407_0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb^{-1} . Final error is Monte-Carlo events only.

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Signal region	SR3b	
Process	gluino-mediated squark to sleptons decay	
Point	$m(\tilde{g}) = 905 \text{ GeV}, \quad m(\tilde{\ell}_L; \tilde{\nu}) = 605 \text{ GeV}, \quad m(\tilde{\chi}_1^0) = 505 \text{ GeV}$	
Source	ATLAS	CheckMATE
Generated events	40000	40000
≥ 2 signal leptons	10453	11174
Trigger	10298	11174
$m_{\ell\ell} > 12 \text{ GeV}$	10297	11157
≥ 2 same sign leptons	4734.9	4976
≥ 5 jets	1136	1460
3 b jets	14	5
$m_{\text{eff}} > 350 \text{ GeV}$	14	5

Table 11: Cutflow validation for atlas_1407_0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb^{-1} . Final error is Monte-Carlo events only.

Signal region	SR1b	
Process	gluino-mediated squark to sleptons decay	
Point	$m(\tilde{g}) = 905 \text{ GeV}, \quad m(\tilde{\ell}_L; \tilde{\nu}) = 605 \text{ GeV}, \quad m(\tilde{\chi}_1^0) = 505 \text{ GeV}$	
Source	ATLAS	CheckMATE
Generated events	40000	40000
≥ 2 signal leptons	10453	11174
Trigger	10298	11174
$m_{\ell\ell} > 12 \text{ GeV}$	10297	11157
2 same sign leptons	2240.5	2502
≥ 3 jets	1848.7	2140
$\geq 1b$ jets	491	431
$E_T^{\text{miss}} \geq 150 \text{ GeV}$	287.2	228
$m_T > 100 \text{ GeV}$	257.6	196
$m_{\text{eff}} > 700 \text{ GeV}$	208	143

Table 12: Cutflow validation for atlas_1407_0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb^{-1} . Final error is Monte-Carlo events only.

Signal region	SR0b	
Process	gluino-mediated squark to sleptons decay	
Point	$m(\tilde{g}) = 905 \text{ GeV}, \quad m(\tilde{\ell}_L; \tilde{\nu}) = 605 \text{ GeV}, \quad m(\tilde{\chi}_1^0) = 505 \text{ GeV}$	
Source	ATLAS	CheckMATE
Generated events	40000	40000
≥ 2 signal leptons	10453	11174
Trigger	10298	11174
$m_{\ell\ell} > 12 \text{ GeV}$	10297	11157
2 same sign leptons	2240	2502
≥ 3 jets	1848.7	2140
≥ 0 b jets	1357.7	1709
$E_T^{miss} \geq 150 \text{ GeV}$	784.8	844
$m_T > 100 \text{ GeV}$	692	767
$m_{\text{eff}} > 700 \text{ GeV}$	692	767

Table 13: Cutflow validation for atlas_1407_0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb^{-1} . Final error is Monte-Carlo events only.

Signal region	SR3Low	
Process	gluino-mediated squark to sleptons decay	
Point	$m(\tilde{g}) = 905 \text{ GeV}, \quad m(\tilde{\ell}_L; \tilde{\nu}) = 605 \text{ GeV}, \quad m(\tilde{\chi}_1^0) = 505 \text{ GeV}$	
Source	ATLAS	CheckMATE
Generated events	40000	40000
≥ 2 signal leptons	10453	11174
Trigger	10298	11174
$m_{\ell\ell} > 12 \text{ GeV}$	10297	11157
≥ 3 leptons	2480.4	2474
≥ 4 jets	1205.5	1381
Z veto	1090.7	1292
$50 \text{ GeV} \leq E_T^{miss} \leq 150 \text{ GeV}$	363.7	515
$m_{\text{eff}} > 400 \text{ GeV}$	363.7	515

Table 14: Cutflow validation for atlas_1407_0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb^{-1} . Final error is Monte-Carlo events only.

Signal region	SR3Lhigh	
Process	gluino-mediated squark to sleptons decay	
Point	$m(\tilde{g}) = 905 \text{ GeV}, \quad m(\tilde{\ell}_L; \tilde{\nu}) = 605 \text{ GeV}, \quad m(\tilde{\chi}_1^0) = 505 \text{ GeV}$	
Source	ATLAS	CheckMATE
Generated events	40000	40000
≥ 2 signal leptons	10453	11174
Trigger	10298	11174
$m_{\ell\ell} > 12 \text{ GeV}$	10297	11157
≥ 3 leptons	2480.4	2474
≥ 4 jets	1205.5	1381
$E_T^{miss} \geq 150 \text{ GeV}$	739.4	756
$m_{\text{eff}} > 400 \text{ GeV}$	739.4	756

Table 15: Cutflow validation for atlas_1407_0608. Shown are number of events passing each cut normalised to a luminosity of 20.1 fb^{-1} . Final error is Monte-Carlo events only.