

## 0.1 $\tilde{t}_1(500) \rightarrow t\tilde{\chi}_1^0(200)$ (ATLAS\_CONF\_2013\_037)

- Process:  $\tilde{t}_1\tilde{t}_1^* \rightarrow (t\tilde{\chi}_1^0)(\bar{t}\tilde{\chi}_1^0)$ .
- Mass:  $m_{\tilde{t}_1} = 500$  GeV,  $m_{\tilde{\chi}_1^0} = 200$  GeV.
- The number of events:  $10^4$ .
- Event Generator: Herwig++ 2.5.2.

#	cut name	$\epsilon_{\text{Exp}}$	$\epsilon_{\text{Atom}}$	$\frac{\text{Atom}}{\text{Exp}}$	$\frac{(\text{Exp}-\text{Atom})}{\text{Error}}$	#/?	$R_{\text{Exp}}$	$R_{\text{Atom}}$	$\frac{\text{Atom}}{\text{Exp}}$	$\frac{(\text{Exp}-\text{Atom})}{\text{Error}}$
0	[00] No cut	100.0	100.0							
1	[02] Lepton (= 1 signal)	$22.81 \pm 0.15$	$22.54 \pm 0.42$	0.99	-0.61	0	$0.23 \pm 0.0$	$0.23 \pm 0.0$	0.99	-0.61
2	[03] 4jets (80,60,40,25)	$12.34 \pm 0.11$	$11.13 \pm 0.31$	0.9	-3.61	1	$0.54 \pm 0.0$	$0.49 \pm 0.01$	0.91	-3.18
3	[04] $\geq 1$ b in 4 leading jets	$10.53 \pm 0.1$	$9.38 \pm 0.29$	0.89	-3.73	2	$0.85 \pm 0.01$	$0.84 \pm 0.03$	0.99	-0.41
4	[05] MET > 100	$8.65 \pm 0.09$	$7.6 \pm 0.27$	0.88	-3.72	3	$0.82 \pm 0.01$	$0.81 \pm 0.03$	0.99	-0.35
5	[06] MET/ $\sqrt{(H_T)} > 5$	$8.45 \pm 0.09$	$7.38 \pm 0.26$	0.87	-3.85	4	$0.98 \pm 0.01$	$0.97 \pm 0.03$	0.99	-0.17
6	[07] $\Delta\phi(j_2, \text{MET}) > 0.8$	$7.63 \pm 0.09$	$7.2 \pm 0.26$	0.94	-1.59	5	$0.9 \pm 0.01$	$0.98 \pm 0.04$	1.08	1.97
7	[SRtN2] MET > 200	$4.31 \pm 0.07$	$4.12 \pm 0.2$	0.96	-0.9	6	$0.56 \pm 0.01$	$0.57 \pm 0.03$	1.01	0.27
8	[SRtN2] MET/ $\sqrt{(H_T)} > 13$	$2.33 \pm 0.05$	$2.27 \pm 0.15$	0.97	-0.39	7	$0.54 \pm 0.01$	$0.55 \pm 0.04$	1.02	0.27
9	[SRtN2] $m_T > 140$	$1.91 \pm 0.04$	$1.96 \pm 0.14$	1.03	0.33	8	$0.82 \pm 0.02$	$0.86 \pm 0.06$	1.05	0.68
10	[SRtN3] MET > 275	$1.87 \pm 0.04$	$1.69 \pm 0.13$	0.9	-1.32	6	$0.24 \pm 0.01$	$0.23 \pm 0.02$	0.96	-0.54
11	[SRtN3] MET/ $\sqrt{(H_T)} > 11$	$1.82 \pm 0.04$	$1.65 \pm 0.13$	0.91	-1.27	10	$0.97 \pm 0.02$	$0.98 \pm 0.08$	1.0	0.03
12	[SRtN3] $m_T > 200$	$1.05 \pm 0.03$	$1.05 \pm 0.1$	1.0	-0.03	11	$0.58 \pm 0.02$	$0.64 \pm 0.06$	1.1	0.9
13	[SRbC1-3] MET > 150	$6.03 \pm 0.08$	$5.29 \pm 0.22$	0.88	-3.12	6	$0.79 \pm 0.01$	$0.73 \pm 0.03$	0.93	-1.69
14	[SRbC1-3] MET/ $\sqrt{(H_T)} > 7$	$5.92 \pm 0.08$	$5.14 \pm 0.22$	0.87	-3.32	13	$0.98 \pm 0.01$	$0.97 \pm 0.04$	0.99	-0.21
15	[SRbC1-3] $m_T > 120$	$4.58 \pm 0.07$	$3.9 \pm 0.19$	0.85	-3.31	14	$0.77 \pm 0.01$	$0.76 \pm 0.04$	0.98	-0.38
16	[SRbC1-3] MET > 160	$4.39 \pm 0.07$	$3.79 \pm 0.19$	0.86	-2.97	15	$0.96 \pm 0.01$	$0.97 \pm 0.05$	1.01	0.25
17	[SRbC1-3] MET/ $\sqrt{(H_T)} > 8$	$4.26 \pm 0.07$	$3.69 \pm 0.19$	0.87	-2.86	16	$0.97 \pm 0.01$	$0.97 \pm 0.05$	1.0	0.06
18	[SRbC1-3] $m_{\text{eff}} > 550$	$4.01 \pm 0.06$	$3.47 \pm 0.18$	0.86	-2.81	17	$0.94 \pm 0.01$	$0.94 \pm 0.05$	1.0	-0.04
19	[SRbC1-3] $m_{\text{eff}} > 700$	$2.66 \pm 0.05$	$2.23 \pm 0.15$	0.84	-2.76	18	$0.66 \pm 0.01$	$0.64 \pm 0.04$	0.97	-0.46
20	SRtN2	$0.84 \pm 0.03$	$0.76 \pm 0.09$	0.9	-0.87	9	$0.44 \pm 0.02$	$0.39 \pm 0.04$	0.88	-1.1
21	SRtN3	$0.38 \pm 0.02$	$0.41 \pm 0.06$	1.07	0.42	12	$0.36 \pm 0.02$	$0.39 \pm 0.06$	1.08	0.44
22	SRbC1	$3.11 \pm 0.06$	$2.75 \pm 0.16$	0.88	-2.08	6	$0.41 \pm 0.01$	$0.38 \pm 0.02$	0.94	-1.07
23	SRbC2	$0.6 \pm 0.02$	$0.53 \pm 0.07$	0.89	-0.86	6	$0.08 \pm 0.0$	$0.07 \pm 0.01$	0.94	-0.42
24	SRbC3	$0.16 \pm 0.01$	$0.19 \pm 0.04$	1.19	0.67	6	$0.02 \pm 0.0$	$0.03 \pm 0.01$	1.26	0.87

Table 1: The cut-flow table for the  $\tilde{t}_1(500) \rightarrow t\tilde{\chi}_1^0(200)$  model.