$\tilde{t}_1(300) \to b\tilde{\chi}_1^+(150) \to W^+\tilde{\chi}_1^0(1)$ (**ATLAS_2014_I1286444 (1403.4853)**)

- Process: $pp \to \tilde{t}_1\tilde{t}_1^* : \tilde{t}_1 \to b\tilde{\chi}_1^+ \to W^+\tilde{\chi}_1^0$.
- Mass: $m_{\tilde{t}_1} = 300$ GeV, $m_{\tilde{\chi}_1^\pm} = 150$ GeV, $m_{\tilde{\chi}_1^0} = 1$ GeV.
- The number of events: 10^4.
- Event Generator: `Herwig++ 2.5.2`.

#	cut name	ϵ_{Exp}	ϵ_{Atom}	$\frac{\text{Atom}}{\text{Exp}}$	$\frac{(\text{Exp}-\text{Atom})}{\text{Error}}$	#/?	R_{Exp}	R_{Atom}	$\frac{\text{Atom}}{\text{Exp}}$	$\frac{(\text{Exp}-\text{Atom})}{\text{Error}}$
0	$p_T(\ell_1) > 25$: SF	100.0 ± 0.32	100.0 ± 2.46				±	±		
1	Z veto: SF	70.97 ± 0.27	70.98 ± 2.12	1.0	0.01	0	0.71 ± 0.0	0.71 ± 0.02	1.0	0.01
2	$\Delta\phi_j > 1.0$: SF	38.07 ± 0.2	38.37 ± 1.6	1.01	0.19	1	0.54 ± 0.0	0.54 ± 0.02	1.01	0.18
3	$\Delta\phi_b > 1.5$: SF	36.96 ± 0.19	36.96 ± 1.57	1.0	-0.0	2	0.97 ± 0.01	0.96 ± 0.04	0.99	-0.18
4	$m_{T2} > 90$: SF	2.38 ± 0.05	2.53 ± 0.42	1.06	0.36	3	0.06 ± 0.0	0.07 ± 0.01	1.06	0.36
5	$m_{T2} > 120$: SF	0.36 ± 0.02	0.21 ± 0.12	**0.59**	-1.18	4	0.15 ± 0.01	0.08 ± 0.05	**0.56**	-1.37
6	$m_{T2} > 100, p_T(j) > 100, 50$: SF	1.02 ± 0.03	0.63 ± 0.21	**0.62**	-1.8	4	0.43 ± 0.01	0.25 ± 0.08	**0.58**	-2.1
7	$m_{T2} > 110, p_T(j) > 20, 20$: SF	0.82 ± 0.03	0.42 ± 0.17	**0.52**	-2.26	4	0.34 ± 0.01	0.17 ± 0.07	**0.49**	-2.55

Table 1: The cut-flow table for the same flavour channel.

#	cut name	ϵ_{Exp}	ϵ_{Atom}	$\frac{\text{Atom}}{\text{Exp}}$	$\frac{(\text{Exp}-\text{Atom})}{\text{Error}}$	#/?	R_{Exp}	R_{Atom}	$\frac{\text{Atom}}{\text{Exp}}$	$\frac{(\text{Exp}-\text{Atom})}{\text{Error}}$
0	$p_T(\ell_1) > 25$: DF	100.0 ± 0.32	100.0 ± 2.52				±	±		
1	$\Delta\phi_j > 1.0$: DF	51.36 ± 0.23	56.2 ± 1.95	1.09	2.46	0	0.51 ± 0.0	0.56 ± 0.02	1.09	2.46
2	$\Delta\phi_b > 1.5$: DF	49.75 ± 0.22	54.37 ± 1.92	1.09	2.38	1	0.97 ± 0.0	0.97 ± 0.03	1.0	-0.04
3	$m_{T2} > 90$: DF	3.01 ± 0.05	3.37 ± 0.5	1.12	0.73	2	0.06 ± 0.0	0.06 ± 0.01	1.03	0.17
4	$m_{T2} > 120$: DF	0.37 ± 0.02	0.15 ± 0.1	**0.4**	-2.09	3	0.12 ± 0.01	0.04 ± 0.03	**0.36**	-2.5
5	$m_{T2} > 100, p_T(j) > 100, 50$: DF	0.61 ± 0.02	1.03 ± 0.27	**1.7**	1.53	3	0.2 ± 0.01	0.3 ± 0.08	**1.51**	1.26
6	$m_{T2} > 110, p_T(j) > 20, 20$: DF	0.64 ± 0.03	0.73 ± 0.23	1.14	0.38	3	0.21 ± 0.01	0.22 ± 0.07	1.02	0.05

Table 2: The cut-flow table for the different flavour channel.