## 0.1 $\tilde{\chi}_1^{\pm}(425) \to (\ell\tilde{\nu}(250) \text{ or } \nu\tilde{\ell}(250)) \to \nu\ell\tilde{\chi}_1^0(75)$ (ATLAS_2014_I1286761 (1403.5294))

- Process: $\tilde{\chi}_1^+\tilde{\chi}_1^- : \tilde{\chi}_1^{\pm} \to (\ell\tilde{\nu} \text{ or } \nu\tilde{\ell}) \to \nu\ell\tilde{\chi}_1^0$.
- Mass: $m_{\tilde{\chi}_1^{\pm}} = 425$ GeV, $m_{\tilde{\ell}/\tilde{\nu}} = 250$ GeV, $m_{\tilde{\chi}_1^0} = 75$ 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 | = 2 OSlep $p_T > 35, 20$: SF | 100.0 | 100.0 | | | | | | | |
| 1 | Jet veto: SF | 40.35 ± 0.71 | 29.99 ± 1.2 | 0.74 | −7.44 | 0 | 0.4 ± 0.01 | 0.3 ± 0.01 | 0.74 | −7.44 |
| 2 | $Z$ veto: SF | 38.37 ± 0.7 | 28.22 ± 1.16 | 0.74 | −7.49 | 1 | 0.95 ± 0.02 | 0.94 ± 0.04 | 0.99 | −0.24 |
| 3 | $m_{T2} > 90$: SF | 24.01 ± 0.55 | 17.48 ± 0.92 | 0.73 | −6.07 | 2 | 0.63 ± 0.01 | 0.62 ± 0.03 | 0.99 | −0.18 |
| 4 | $m_{T2} > 120$: SF | 19.06 ± 0.49 | 13.02 ± 0.8 | 0.68 | −6.42 | 3 | 0.79 ± 0.02 | 0.74 ± 0.05 | 0.94 | −0.97 |
| 5 | $m_{T2} > 150$: SF | 14.11 ± 0.42 | 9.32 ± 0.68 | 0.66 | −5.97 | 4 | 0.74 ± 0.02 | 0.72 ± 0.05 | 0.97 | −0.43 |

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

| # | 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 | = 2 OSlep $p_T > 35, 20$: DF | 100.0 | 100.0 | | | | | | | |
| 1 | Jet veto: DF | 39.3 ± 0.7 | 29.59 ± 1.18 | 0.75 | −7.06 | 0 | 0.39 ± 0.01 | 0.3 ± 0.01 | 0.75 | −7.06 |
| 2 | $Z$ veto: DF | 39.3 ± 0.7 | 29.59 ± 1.18 | 0.75 | −7.06 | 1 | 1.0 ± 0.02 | 1.0 ± 0.04 | 1.0 | 0.0 |
| 3 | $m_{T2} > 90$: DF | 25.24 ± 0.56 | 18.03 ± 0.93 | 0.71 | −6.62 | 2 | 0.64 ± 0.01 | 0.61 ± 0.03 | 0.95 | −0.96 |
| 4 | $m_{T2} > 120$: DF | 20.13 ± 0.5 | 14.77 ± 0.85 | 0.73 | −5.44 | 3 | 0.8 ± 0.02 | 0.82 ± 0.05 | 1.03 | 0.43 |
| 5 | $m_{T2} > 50$: DF | 14.7 ± 0.43 | 11.12 ± 0.74 | 0.76 | −4.19 | 4 | 0.73 ± 0.02 | 0.75 ± 0.05 | 1.03 | 0.41 |

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