

$\tilde{\chi}_1^+ \tilde{\chi}_1^- : \tilde{\chi}_1^\pm(350) \rightarrow (\ell \tilde{\nu}(175) \text{ or } \nu \tilde{\ell}(175)) \rightarrow \nu \ell \tilde{\chi}_1^0(0)$  (**ATLAS\_2014\_I1286761**  
(**1403.5294**))

- Process:  $\tilde{\chi}_1^+ \tilde{\chi}_1^- : \tilde{\chi}_1^\pm \rightarrow (\ell \tilde{\nu} \text{ or } \nu \tilde{\ell}) \rightarrow \nu \ell \tilde{\chi}_1^0$ .
- Mass:  $m_{\tilde{\chi}_1^\pm} = 350$  GeV,  $m_{\tilde{\ell}/\tilde{\nu}} = 175$  GeV,  $m_{\tilde{\chi}_1^0} = 0$  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 | $100.0 \pm 0.5$         | $100.0 \pm 2.0$          |                                  |   | -1  | $\pm$            | $\pm$             |                                  |   |
| 1 | Jet veto: SF                  | $43.19 \pm 0.33$        | $39.35 \pm 1.35$         | 0.91                             | -2.77   | 0   | $0.43 \pm 0.0$   | $0.39 \pm 0.01$   | 0.91                             | -2.77   |
| 2 | Z veto: SF                    | $40.58 \pm 0.32$        | $36.4 \pm 1.3$           | 0.9                              | -3.13   | 1   | $0.94 \pm 0.01$  | $0.93 \pm 0.03$   | 0.98                             | -0.43   |
| 3 | $m_{T2} > 90$ : SF            | $24.25 \pm 0.25$        | $22.45 \pm 1.04$         | 0.93                             | -1.69   | 2   | $0.6 \pm 0.01$   | $0.62 \pm 0.03$   | 1.03                             | 0.66  |
| 4 | $m_{T2} > 120$ : SF           | $18.14 \pm 0.21$        | $17.1 \pm 0.91$          | 0.94                             | -1.11   | 3   | $0.75 \pm 0.01$  | $0.76 \pm 0.04$   | 1.02                             | 0.33  |
| 5 | $m_{T2} > 150$ : SF           | $11.92 \pm 0.17$        | $11.4 \pm 0.75$          | 0.96                             | -0.68   | 4   | $0.66 \pm 0.01$  | $0.67 \pm 0.04$   | 1.01                             | 0.21  |

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 | $100.0 \pm 0.5$         | $100.0 \pm 2.04$         |                                  |   | -1  | $\pm$            | $\pm$             |                                  |   |
| 1 | Jet veto: DF                  | $41.7 \pm 0.32$         | $41.04 \pm 1.4$          | 0.98                             | -0.46   | 0   | $0.42 \pm 0.0$   | $0.41 \pm 0.01$   | 0.98                             | -0.46   |
| 2 | Z veto: DF                    | $41.7 \pm 0.32$         | $41.04 \pm 1.4$          | 0.98                             | -0.46   | 1   | $1.0 \pm 0.01$   | $1.0 \pm 0.03$    | 1.0                              | 0.0   |
| 3 | $m_{T2} > 90$ : DF            | $24.58 \pm 0.25$        | $23.59 \pm 1.08$         | 0.96                             | -0.89   | 2   | $0.59 \pm 0.01$  | $0.57 \pm 0.03$   | 0.98                             | -0.54   |
| 4 | $m_{T2} > 120$ : DF           | $18.92 \pm 0.22$        | $18.12 \pm 0.95$         | 0.96                             | -0.82   | 3   | $0.77 \pm 0.01$  | $0.77 \pm 0.04$   | 1.0                              | -0.04   |
| 5 | $m_{T2} > 150$ : DF           | $13.0 \pm 0.18$         | $12.75 \pm 0.8$          | 0.98                             | -0.3  | 4   | $0.69 \pm 0.01$  | $0.7 \pm 0.04$    | 1.02                             | 0.37  |

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