

Overview of SUSY results: electroweak production

137 fb⁻¹ (13 TeV)

$pp \rightarrow \tilde{\chi}_2^0 \tilde{\chi}_1^\pm$

$pp \rightarrow \tilde{\chi}_2^0 \tilde{\chi}_1^\pm \rightarrow \ell \tilde{\nu} \ell \tilde{\ell} \rightarrow \ell \nu \ell \ell \tilde{\chi}_1^0 \tilde{\chi}_1^0$ **2 ℓ same-sign and 3 ℓ :** SUS-19-012 flavour democratic, $x = 0.5$

2 ℓ same-sign and $\geq 3\ell$: SUS-19-012 flavour democratic, $x = 0.05$

2 ℓ same-sign and $\geq 3\ell$: SUS-19-012 flavour democratic, $x = 0.95$

$pp \rightarrow \tilde{\chi}_2^0 \tilde{\chi}_1^\pm \rightarrow \tilde{\tau} \nu \tau \tilde{\ell} \rightarrow \tau \nu \ell \ell \tilde{\chi}_1^0 \tilde{\chi}_1^0$ **2 ℓ same-sign and 3 ℓ/τ_h :** SUS-19-012 τ enriched, $x = 0.5$

3 ℓ/τ_h : SUS-19-012 τ enriched, $x = 0.05$

3 ℓ/τ_h : SUS-19-012 τ enriched, $x = 0.95$

$pp \rightarrow \tilde{\chi}_2^0 \tilde{\chi}_1^\pm \rightarrow \tilde{\tau} \nu \tau \tilde{\tau} \rightarrow \tau \nu \tau \tau \tilde{\chi}_1^0 \tilde{\chi}_1^0$ **$\geq 3\ell/\tau_h$:** SUS-19-012 τ dominated, $x = 0.5$

$pp \rightarrow \tilde{\chi}_2^0 \tilde{\chi}_1^\pm \rightarrow WH \tilde{\chi}_1^0 \tilde{\chi}_1^0$ **2 ℓ same-sign and $\geq 3\ell/\tau_h$:** SUS-19-012

1 ℓ +jets: SUS-20-003

$pp \rightarrow \tilde{\chi}_2^0 \tilde{\chi}_1^\pm \rightarrow WZ \tilde{\chi}_1^0 \tilde{\chi}_1^0$ **2 ℓ opposite-sign:** arXiv:2012.08600

2 ℓ same-sign and 3 ℓ : SUS-19-012

2 ℓ and 3 ℓ soft: SUS-18-004 $\Delta M = 5\text{--}10$ GeV

$pp \rightarrow \tilde{\chi}_2^0 \tilde{\chi}_1^\pm / \tilde{\chi}_1^0 \tilde{\chi}_1^\pm, \tilde{\chi}_1^\pm / \tilde{\chi}_2^0 \rightarrow (W^*/Z^*) \tilde{\chi}_1^0$ **2 ℓ and 3 ℓ soft:** SUS-18-004 higgsino simplified model, $\Delta M = 5\text{--}10$ GeV

$pp \rightarrow \tilde{\chi}_1^\pm \tilde{\chi}_1^\pm$

$pp \rightarrow \tilde{\chi}_1^\pm \tilde{\chi}_1^\pm, \tilde{\chi}_1^\pm \rightarrow W \tilde{\chi}_1^0$ **2 ℓ opposite-sign:** arXiv:1807.07799 $M_{\tilde{\chi}_1^0} = 1$ GeV

$pp \rightarrow \tilde{\chi}_1^\pm \tilde{\chi}_1^\pm, \tilde{\chi}_1^\pm \rightarrow (\tilde{\ell} \nu / \ell \tilde{\nu}) \rightarrow \ell \nu \tilde{\chi}_1^0$ **2 ℓ opposite-sign:** arXiv:1807.07799 $\text{BF}(\tilde{\ell} \nu) = 50\%$, $x = 0.5$

$pp \rightarrow \tilde{\ell} \tilde{\ell}$

$pp \rightarrow \tilde{\ell}_{L/R} \tilde{\ell}_{L/R}, \tilde{\ell} \rightarrow \ell \tilde{\chi}_1^0$ **$e^+e^-, \mu^+\mu^-$:** arXiv:2012.08600

0 200 400 600 800 1000 1200 1400

mass scale [GeV]

Selection of observed limits at 95% C.L. (theory uncertainties are not included). Probe **up to** the quoted mass limit for light LSPs unless stated otherwise. The quantities ΔM and x represent the absolute mass difference between the primary sparticle and the LSP, and the difference between the intermediate sparticle and the LSP relative to ΔM , respectively, unless indicated otherwise.