

Overview of SUSY results: squark pair production

137 fb⁻¹ (13 TeV)

pp → $\tilde{t}\tilde{t}$

$\tilde{t} \rightarrow t\tilde{\chi}_1^0$

Combination: SUS-20-002

0 ℓ : arXiv:1909.03460;1908.04722,2103.01290

1 ℓ : arXiv:1912.08887

2 ℓ opposite-sign: arXiv:2008.05936

$\tilde{t} \rightarrow b\tilde{\chi}_1^\pm \rightarrow bW^\pm\tilde{\chi}_1^0$

Combination: SUS-20-002

$x = 0.5$

0 ℓ : arXiv:1909.03460;2103.01290

$x = 0.5$

1 ℓ : arXiv:1912.08887

$x = 0.5$

2 ℓ opposite-sign: arXiv:2008.05936

$x = 0.5$

$\tilde{t} \rightarrow (t\tilde{\chi}_1^0/b\tilde{\chi}_1^\pm \rightarrow bW\tilde{\chi}_1^0)$

Combination: SUS-20-002

$\Delta M_{\tilde{\chi}_1^\pm} = 5$ GeV, BF=50%

0 ℓ : arXiv:1909.03460;2103.01290

$\Delta M_{\tilde{\chi}_1^\pm} = 5$ GeV, BF=50%

1 ℓ : arXiv:1912.08887

$\tilde{t} \rightarrow b\bar{f}f'\tilde{\chi}_1^0$

0 ℓ : arXiv:1909.03460;2103.01290

$\Delta M < 80$ GeV (max. exclusion)

$\tilde{t} \rightarrow b\tilde{\chi}_1^\pm \rightarrow b\bar{f}f'\tilde{\chi}_1^0$

0 ℓ : arXiv:1909.03460;2103.01290

$\Delta M < 80$ GeV (max. exclusion), $x = 0.5$

$\tilde{t} \rightarrow c\tilde{\chi}_1^0$

0 ℓ : arXiv:2103.01290

$\Delta M < 80$ GeV (max. exclusion)

$\tilde{t} \rightarrow b\tilde{\chi}_1^\pm \rightarrow b\nu\tilde{\ell} \rightarrow b\nu\ell\tilde{\chi}_1^0$

2 ℓ : arXiv:2008.05936

$x = 0.5$

pp → $\tilde{b}\tilde{b}$

$\tilde{b} \rightarrow b\tilde{\chi}_1^0$

0 ℓ : arXiv:1909.03460;1908.04722

$\tilde{b} \rightarrow t\tilde{\chi}_1^\pm \rightarrow tW^\pm\tilde{\chi}_1^0$

2 ℓ same-sign and $\geq 3\ell$: arXiv:2001.10086

$M_{\tilde{\chi}_1^0} = 50$ GeV

pp → $\tilde{q}\tilde{q}$

$\tilde{q} \rightarrow q\tilde{\chi}_1^0$

0 ℓ : arXiv:1909.03460;1908.04722

$\tilde{q}_R + \tilde{q}_L (\tilde{u}, \tilde{d}, \tilde{c}, \tilde{s})$

0 ℓ : arXiv:1909.03460;1908.04722

one light squark ($\tilde{u}, \tilde{d}, \tilde{c},$ or \tilde{s})

0 250 500 750 1000 1250 1500 1750

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.