

Overview of SUSY results: squark pair production

36 fb⁻¹ (13 TeV)

pp → $\tilde{t}\tilde{t}$

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

0 ℓ : arXiv:1705.04650;1704.07781,1802.02110,1707.03316,1710.11188

1 ℓ : arXiv:1706.04402

2 ℓ opposite-sign: arXiv:1711.00752

2 ℓ opposite-sign: arXiv:1807.07799

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

0 ℓ : arXiv:1705.04650;1707.03316 $x = 0.5$

1 ℓ : arXiv:1706.04402 $x = 0.5$

2 ℓ opposite-sign: arXiv:1711.00752 $x = 0.5$

2 ℓ opposite-sign: arXiv:1807.07799 $x = 0.5$

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

0 ℓ : arXiv:1705.04650;1707.03316 $\Delta M_{\tilde{\chi}_1^\pm} = 5$ GeV, BF=50%

1 ℓ : arXiv:1706.04402

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

0 ℓ : arXiv:1707.03316 $\Delta M < 80$ GeV (max. exclusion)

1 ℓ soft: arXiv:1805.05784 $\Delta M < 80$ GeV (max. exclusion)

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

0 ℓ : arXiv:1707.03316 $\Delta M < 80$ GeV (max. exclusion), $x = 0.5$

1 ℓ soft: arXiv:1805.05784 $\Delta M < 80$ GeV (max. exclusion), $x = 0.5$

2 ℓ opposite-sign: arXiv:1801.01846 $\Delta M < 80$ GeV (max. exclusion), $x = 0.5$

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

0 ℓ : arXiv:1705.04650;1707.07274,1802.02110,1707.03316 $\Delta M < 80$ GeV (max. exclusion)

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

2 ℓ : arXiv:1711.00752 $x = 0.5$

$\tilde{t}_2 \rightarrow H\tilde{t}_1 \rightarrow Ht\tilde{\chi}_1^0$

≥ 3 ℓ : arXiv:1710.09154 $\Delta M_{\tilde{t}_1} = M_t$, $M_{\tilde{t}_1} = 200$ GeV

$\tilde{t}_2 \rightarrow Z/H\tilde{t}_1 \rightarrow Z/Ht\tilde{\chi}_1^0$

≥ 3 ℓ : arXiv:1710.09154 $\Delta M_{\tilde{t}_1} = M_t$, BF = 50%, $M_{\tilde{t}_1} = 200$ GeV

$\tilde{t}_2 \rightarrow Z\tilde{t}_1 \rightarrow Zt\tilde{\chi}_1^0$

≥ 3 ℓ : arXiv:1710.09154 $\Delta M_{\tilde{t}_1} = M_t$, $M_{\tilde{t}_1} = 200$ GeV

pp → $\tilde{b}\tilde{b}$

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

0 ℓ : arXiv:1707.07274;1704.07781,1705.04650,1802.02110

$\tilde{b} \rightarrow b\tilde{\chi}_2^0 \rightarrow bH\tilde{\chi}_1^0$

h → $\gamma\gamma$: arXiv:1709.00384 $\Delta M_{\tilde{\chi}_2^0} = 130$ GeV

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

2 ℓ same-sign: arXiv:1704.07323 $M_{\tilde{\chi}_1^0} = 50$ GeV

≥ 3 ℓ : arXiv:1710.09154 $M_{\tilde{\chi}_1^0} = 50$ GeV

$\tilde{b} \rightarrow b\tilde{\chi}_2^0 \rightarrow (b\tilde{\ell}\tilde{\ell} \rightarrow b\tilde{\ell}\tilde{\chi}_1^0)/(bZ\tilde{\chi}_1^0)$

2 ℓ opposite-sign: arXiv:1709.08908 max. exclusion, $M_{\tilde{\chi}_1^0} = 100$ GeV, $x_{\tilde{\ell}} = 0.5$, BF = 50%

pp → $\tilde{q}\tilde{q}$

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

0 ℓ : arXiv:1705.04650;1704.07781,1802.02110

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

0 ℓ : arXiv:1705.04650;1704.07781,1802.02110

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

0 200 400 600 800 1000 1200 1400 1600
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.