

Model	Signature	$\int \mathcal{L} dt$ [fb ⁻¹]	Mass limit	Reference			
Inclusive Searches	$q\bar{q}, \bar{q} \rightarrow q\bar{\chi}_1^0$	0 e, μ mono-jet	2-6 jets E_T^{miss} 139 1-3 jets E_T^{miss} 36.1	\tilde{q} [10x Degen.] 1.9 \tilde{q} [1x, 8x Degen.] 0.43 0.71	$m(\tilde{\chi}_1^0) < 400$ GeV $m(\tilde{q}) - m(\tilde{\chi}_1^0) = 5$ GeV	ATLAS-CONF-2019-040 1711.03301	
	$\tilde{g}\tilde{g}, \tilde{g} \rightarrow q\bar{q}\tilde{\chi}_1^0$	0 e, μ	2-6 jets E_T^{miss} 139	\tilde{g} 2.35 \tilde{g} Forbidden 1.15-1.95	$m(\tilde{\chi}_1^0) = 0$ GeV $m(\tilde{\chi}_1^0) = 1000$ GeV	ATLAS-CONF-2019-040 ATLAS-CONF-2019-040	
	$\tilde{g}\tilde{g}, \tilde{g} \rightarrow q\bar{q}(\ell\ell)\tilde{\chi}_1^0$	3 e, μ $ee, \mu\mu$	4 jets E_T^{miss} 36.1 2 jets E_T^{miss} 36.1	\tilde{g} 1.85 \tilde{g} 1.2	$m(\tilde{\chi}_1^0) < 800$ GeV $m(\tilde{g}) - m(\tilde{\chi}_1^0) = 50$ GeV	1706.03731 1805.11381	
	$\tilde{g}\tilde{g}, \tilde{g} \rightarrow qqWZ\tilde{\chi}_1^0$	0 e, μ SS e, μ	7-11 jets E_T^{miss} 36.1 6 jets 139	\tilde{g} 1.8 \tilde{g} 1.15	$m(\tilde{\chi}_1^0) < 400$ GeV $m(\tilde{g}) - m(\tilde{\chi}_1^0) = 200$ GeV	1708.02794 1909.08457	
	$\tilde{g}\tilde{g}, \tilde{g} \rightarrow t\bar{t}\tilde{\chi}_1^0$	0-1 e, μ SS e, μ	3 b E_T^{miss} 79.8 6 jets 139	\tilde{g} 2.25 \tilde{g} 1.25	$m(\tilde{\chi}_1^0) < 200$ GeV $m(\tilde{g}) - m(\tilde{\chi}_1^0) = 300$ GeV	ATLAS-CONF-2018-041 ATLAS-CONF-2019-015	
	3 rd gen. squarks direct production	$\tilde{b}_1\tilde{b}_1, \tilde{b}_1 \rightarrow b\tilde{\chi}_1^0 / t\tilde{\chi}_1^\pm$	Multiple Multiple Multiple	36.1 36.1 139	\tilde{b}_1 Forbidden 0.9 \tilde{b}_1 Forbidden 0.58-0.82 \tilde{b}_1 Forbidden 0.74	$m(\tilde{\chi}_1^0) = 300$ GeV, $BR(b\tilde{\chi}_1^\pm) = 1$ $m(\tilde{\chi}_1^0) = 300$ GeV, $BR(b\tilde{\chi}_1^\pm) = BR(t\tilde{\chi}_1^\pm) = 0.5$ $m(\tilde{\chi}_1^0) = 200$ GeV, $m(\tilde{\chi}_1^\pm) = 300$ GeV, $BR(t\tilde{\chi}_1^\pm) = 1$	1708.09266, 1711.03301 1708.09266 ATLAS-CONF-2019-015
$\tilde{b}_1\tilde{b}_1, \tilde{b}_1 \rightarrow b\tilde{\chi}_2^0 \rightarrow bh\tilde{\chi}_1^0$		0 e, μ	6 b E_T^{miss} 139	\tilde{b}_1 Forbidden 0.23-1.35 \tilde{b}_1 0.23-0.48	$\Delta m(\tilde{\chi}_2^0, \tilde{\chi}_1^0) = 130$ GeV, $m(\tilde{\chi}_1^0) = 100$ GeV $\Delta m(\tilde{\chi}_2^0, \tilde{\chi}_1^0) = 130$ GeV, $m(\tilde{\chi}_1^0) = 0$ GeV	1908.03122 1908.03122	
$\tilde{t}_1\tilde{t}_1, \tilde{t}_1 \rightarrow Wb\tilde{\chi}_1^0$ or $t\tilde{\chi}_1^0$		0-2 e, μ	0-2 jets/1-2 b E_T^{miss} 36.1	\tilde{t}_1 1.0	$m(\tilde{\chi}_1^0) = 1$ GeV	1506.08616, 1709.04183, 1711.11520	
$\tilde{t}_1\tilde{t}_1, \tilde{t}_1 \rightarrow Wb\tilde{\chi}_1^0$		1 e, μ	3 jets/1 b E_T^{miss} 139	\tilde{t}_1 0.44-0.59	$m(\tilde{\chi}_1^0) = 400$ GeV	ATLAS-CONF-2019-017	
$\tilde{t}_1\tilde{t}_1, \tilde{t}_1 \rightarrow \tau_1 b\nu, \tilde{\tau}_1 \rightarrow \tau\tilde{G}$		1 $\tau + 1 e, \mu, \tau$	2 jets/1 b E_T^{miss} 36.1	\tilde{t}_1 1.16	$m(\tilde{\tau}_1) = 800$ GeV	1803.10178	
$\tilde{t}_1\tilde{t}_1, \tilde{t}_1 \rightarrow c\tilde{\chi}_1^0 / \tilde{c}\tilde{c}, \tilde{c} \rightarrow c\tilde{\chi}_1^0$		0 e, μ	2 c E_T^{miss} 36.1	\tilde{t}_1 0.85 \tilde{t}_1 0.46 \tilde{t}_1 0.43	$m(\tilde{\chi}_1^0) = 0$ GeV $m(\tilde{t}_1, \tilde{c}) - m(\tilde{\chi}_1^0) = 50$ GeV $m(\tilde{t}_1, \tilde{c}) - m(\tilde{\chi}_1^0) = 5$ GeV	1805.01649 1805.01649 1711.03301	
$\tilde{t}_2\tilde{t}_2, \tilde{t}_2 \rightarrow \tilde{t}_1 + h$		0 e, μ	mono-jet E_T^{miss} 36.1	\tilde{t}_2 0.32-0.88	$m(\tilde{\chi}_1^0) = 0$ GeV, $m(\tilde{t}_1) - m(\tilde{\chi}_1^0) = 180$ GeV	1706.03986	
$\tilde{t}_2\tilde{t}_2, \tilde{t}_2 \rightarrow \tilde{t}_1 + Z$		3 e, μ	1 b E_T^{miss} 139	\tilde{t}_2 Forbidden 0.86	$m(\tilde{\chi}_1^0) = 360$ GeV, $m(\tilde{t}_1) - m(\tilde{\chi}_1^0) = 40$ GeV	ATLAS-CONF-2019-016	
EW direct		$\tilde{\chi}_1^\pm\tilde{\chi}_2^0$ via WZ	2-3 e, μ $ee, \mu\mu$	E_T^{miss} 36.1 E_T^{miss} 139	$\tilde{\chi}_1^\pm/\tilde{\chi}_2^0$ 0.6 $\tilde{\chi}_1^\pm/\tilde{\chi}_2^0$ 0.205	$m(\tilde{\chi}_1^0) = 0$ $m(\tilde{\chi}_1^\pm) - m(\tilde{\chi}_1^0) = 5$ GeV	1403.5294, 1806.02293 ATLAS-CONF-2019-014
		$\tilde{\chi}_1^\pm\tilde{\chi}_1^\mp$ via WW	2 e, μ	E_T^{miss} 139	$\tilde{\chi}_1^\pm$ 0.42	$m(\tilde{\chi}_1^0) = 0$	1908.08215
	$\tilde{\chi}_1^\pm\tilde{\chi}_2^0$ via Wh	0-1 e, μ	2 $b/2 \gamma$ E_T^{miss} 139	$\tilde{\chi}_1^\pm/\tilde{\chi}_2^0$ Forbidden 0.74	$m(\tilde{\chi}_1^0) = 70$ GeV	ATLAS-CONF-2019-019, 1909.09226	
	$\tilde{\chi}_1^\pm\tilde{\chi}_1^\mp$ via $\tilde{\ell}_L/\tilde{\nu}$	2 e, μ	E_T^{miss} 139	$\tilde{\chi}_1^\pm$ 1.0	$m(\tilde{\ell}, \tilde{\nu}) = 0.5(m(\tilde{\chi}_1^\pm) + m(\tilde{\chi}_1^0))$	ATLAS-CONF-2019-008	
	$\tilde{\tau}\tilde{\tau}, \tilde{\tau} \rightarrow \tau\tilde{\chi}_1^0$	2 τ	E_T^{miss} 139	$\tilde{\tau}$ [L, R] 0.16-0.3 0.12-0.39	$m(\tilde{\chi}_1^0) = 0$	ATLAS-CONF-2019-018	
	$\tilde{\ell}_{L,R}\tilde{\ell}_{L,R}, \tilde{\ell} \rightarrow \ell\tilde{\chi}_1^0$	2 e, μ 2 e, μ	0 jets E_T^{miss} 139 ≥ 1 E_T^{miss} 139	$\tilde{\ell}$ 0.7 $\tilde{\ell}$ 0.256	$m(\tilde{\chi}_1^0) = 0$ $m(\tilde{\ell}) - m(\tilde{\chi}_1^0) = 10$ GeV	ATLAS-CONF-2019-008 ATLAS-CONF-2019-014	
	$\tilde{H}\tilde{H}, \tilde{H} \rightarrow h\tilde{G}/Z\tilde{G}$	0 e, μ 4 e, μ	$\geq 3 b$ E_T^{miss} 36.1 0 jets E_T^{miss} 36.1	\tilde{H} 0.13-0.23 \tilde{H} 0.3	$BR(\tilde{\chi}_1^0 \rightarrow h\tilde{G}) = 1$ $BR(\tilde{\chi}_1^0 \rightarrow Z\tilde{G}) = 1$	1806.04030 1804.03602	
Long-lived particles	Direct $\tilde{\chi}_1^+\tilde{\chi}_1^-$ prod., long-lived $\tilde{\chi}_1^\pm$	Disapp. trk	1 jet E_T^{miss} 36.1	$\tilde{\chi}_1^\pm$ 0.46 $\tilde{\chi}_1^\pm$ 0.15	Pure Wino Pure Higgsino	1712.02118 ATL-PHYS-PUB-2017-019	
	Stable \tilde{g} R-hadron	Multiple	36.1	\tilde{g} 2.0		1902.01636, 1808.04095	
	Metastable \tilde{g} R-hadron, $\tilde{g} \rightarrow qq\tilde{\chi}_1^0$	Multiple	36.1	\tilde{g} [$\tau(\tilde{g}) = 10$ ns, 0.2 ns] 2.05 2.4	$m(\tilde{\chi}_1^0) = 100$ GeV	1710.04901, 1808.04095	
RPV	LFV $pp \rightarrow \tilde{\nu}_\tau + X, \tilde{\nu}_\tau \rightarrow e\mu/\ell\tau/\mu\tau$	$e\mu, e\tau, \mu\tau$	3.2	$\tilde{\nu}_\tau$ 1.9	$\lambda'_{311} = 0.11, \lambda'_{132/133/233} = 0.07$	1607.08079	
	$\tilde{\chi}_1^\pm\tilde{\chi}_1^\mp/\tilde{\chi}_2^0 \rightarrow WW/Z\ell\ell\ell\nu\nu$	4 e, μ	0 jets E_T^{miss} 36.1	$\tilde{\chi}_1^\pm/\tilde{\chi}_2^0$ [$\lambda_{i33} \neq 0, \lambda_{i2k} \neq 0$] 0.82 1.33	$m(\tilde{\chi}_1^0) = 100$ GeV	1804.03602	
	$\tilde{g}\tilde{g}, \tilde{g} \rightarrow qq\tilde{\chi}_1^0, \tilde{\chi}_1^0 \rightarrow qq$	4-5 large-R jets	36.1	\tilde{g} [$m(\tilde{\chi}_1^0) = 200$ GeV, 1100 GeV] 1.3 \tilde{g} [$\lambda'_{112} = 2e-4, 2e-5$] 1.05 1.9	Large λ'_{12}	1804.03568	
	$\tilde{g}\tilde{g}, \tilde{g} \rightarrow qq\tilde{\chi}_1^0, \tilde{\chi}_1^0 \rightarrow qq$	Multiple	36.1	\tilde{g} [$\lambda'_{112} = 2e-4, 1e-2$] 0.55 1.05	$m(\tilde{\chi}_1^0) = 200$ GeV, bino-like	ATLAS-CONF-2018-003	
	$\tilde{t}_1, \tilde{t}_1 \rightarrow \tilde{\chi}_1^0, \tilde{\chi}_1^0 \rightarrow tbs$	Multiple	36.1	\tilde{t}_1 [λ'_{323}] 0.55 1.05	$m(\tilde{\chi}_1^0) = 200$ GeV, bino-like	ATLAS-CONF-2018-003	
	$\tilde{t}_1\tilde{t}_1, \tilde{t}_1 \rightarrow bs$	2 jets + 2 b	36.7	\tilde{t}_1 [qq, bs] 0.42 0.61		1710.07171	
$\tilde{t}_1\tilde{t}_1, \tilde{t}_1 \rightarrow q\ell$	2 e, μ 1 μ	2 b 36.1 DV 136	\tilde{t}_1 1.0 1.6	$BR(\tilde{t}_1 \rightarrow be/b\mu) > 20\%$ $BR(\tilde{t}_1 \rightarrow q\mu) = 100\%, \cos\theta_t = 1$	1710.05544 ATLAS-CONF-2019-006		

*Only a selection of the available mass limits on new states or phenomena is shown. Many of the limits are based on simplified models, c.f. refs. for the assumptions made.

10⁻¹ 1 Mass scale [TeV]