

Model	Signature	$\int \mathcal{L} dt$ [fb <sup>-1</sup> ]	Mass limit	Reference							
Inclusive Searches	$q\bar{q}, q \rightarrow q\chi_1^0$	0 $e, \mu$ mono-jet	2-6 jets 1-3 jets	$E_T^{\text{miss}}$ $E_T^{\text{miss}}$	139 36.1	$\tilde{q}$ [1x, 6x Degen.] $\tilde{q}$ [8x Degen.]	1.0 0.9	1.85	$m(\tilde{\chi}_1^0) < 400$ GeV $m(\tilde{q}) - m(\tilde{\chi}_1^0) = 5$ GeV	2101.14293 2102.10874	
	$\tilde{g}\tilde{g}, \tilde{g} \rightarrow q\bar{q}\chi_1^0$	0 $e, \mu$	2-6 jets	$E_T^{\text{miss}}$	139	$\tilde{g}$		2.3	$m(\tilde{\chi}_1^0) = 0$ GeV $m(\tilde{g}) = 1000$ GeV	2101.14293 2101.14293	
	$\tilde{g}\tilde{g}, \tilde{g} \rightarrow q\bar{q}W\chi_1^0$	1 $e, \mu$	2-6 jets	$E_T^{\text{miss}}$	139	$\tilde{g}$	Forbidden	1.15-1.95	$m(\tilde{\chi}_1^0) < 600$ GeV	2101.01629	
	$\tilde{g}\tilde{g}, \tilde{g} \rightarrow q\bar{q}(\ell\ell)\chi_1^0$	$ee, \mu\mu$	2 jets	$E_T^{\text{miss}}$	36.1	$\tilde{g}$		1.2	$m(\tilde{g}) - m(\tilde{\chi}_1^0) = 50$ GeV	1805.11381	
	$\tilde{g}\tilde{g}, \tilde{g} \rightarrow q\bar{q}WZ\chi_1^0$	0 $e, \mu$ SS $e, \mu$	7-11 jets 6 jets	$E_T^{\text{miss}}$ $E_T^{\text{miss}}$	139 139	$\tilde{g}$ $\tilde{g}$		1.97	$m(\tilde{\chi}_1^0) < 600$ GeV $m(\tilde{g}) - m(\tilde{\chi}_1^0) = 200$ GeV	2008.06032 1909.08457	
	$\tilde{g}\tilde{g}, \tilde{g} \rightarrow t\bar{t}\chi_1^0$	0-1 $e, \mu$ SS $e, \mu$	3 b 6 jets	$E_T^{\text{miss}}$ $E_T^{\text{miss}}$	79.8 139	$\tilde{g}$ $\tilde{g}$		2.25	$m(\tilde{\chi}_1^0) < 200$ GeV $m(\tilde{g}) - m(\tilde{\chi}_1^0) = 300$ GeV	ATLAS-CONF-2018-041 1909.08457	
	3 <sup>rd</sup> gen. squarks direct production	$\tilde{b}_1\tilde{b}_1$	0 $e, \mu$	2 b	$E_T^{\text{miss}}$	139	$\tilde{b}_1$ $\tilde{b}_1$		1.255	$m(\tilde{\chi}_1^0) < 400$ GeV 10 GeV $< \Delta m(\tilde{b}_1, \tilde{\chi}_1^0) < 20$ GeV	2101.12527 2101.12527
		$\tilde{b}_1\tilde{b}_1, \tilde{b}_1 \rightarrow b\tilde{\chi}_1^0 \rightarrow b\tilde{b}\chi_1^0$	0 $e, \mu$ 2 $\tau$	6 b $\geq 1$ jet	$E_T^{\text{miss}}$ $E_T^{\text{miss}}$	139 139	$\tilde{b}_1$ $\tilde{b}_1$	Forbidden	0.23-1.35	$\Delta m(\tilde{\chi}_2^0, \tilde{\chi}_1^0) = 130$ 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 ATLAS-CONF-2020-031
		$\tilde{t}_1\tilde{t}_1, \tilde{t}_1 \rightarrow t\chi_1^0$	0-1 $e, \mu$	$\geq 1$ jet	$E_T^{\text{miss}}$	139	$\tilde{t}_1$		1.25	$m(\tilde{\chi}_1^0) = 1$ GeV	2004.14060, 2012.03799
		$\tilde{t}_1\tilde{t}_1, \tilde{t}_1 \rightarrow Wb\chi_1^0$	1 $e, \mu$	3 jets+1 b	$E_T^{\text{miss}}$	139	$\tilde{t}_1$	Forbidden	0.65	$m(\tilde{\chi}_1^0) = 500$ GeV	2012.03799
$\tilde{t}_1\tilde{t}_1, \tilde{t}_1 \rightarrow \tilde{t}_1 b\nu, \tilde{t}_1 \rightarrow t\tilde{G}$		1-2 $\tau$	2 jets+1 b	$E_T^{\text{miss}}$	139	$\tilde{t}_1$	Forbidden	1.4	$m(\tilde{\tau}_1) = 800$ GeV	ATLAS-CONF-2021-008	
$\tilde{t}_1\tilde{t}_1, \tilde{t}_1 \rightarrow t\chi_1^0 / \tilde{\ell}\tilde{\ell}, \tilde{\ell} \rightarrow c\tilde{\chi}_1^0$		0 $e, \mu$ 0 $e, \mu$	2 c mono-jet	$E_T^{\text{miss}}$ $E_T^{\text{miss}}$	36.1 139	$\tilde{t}_1$ $\tilde{t}_1$		0.85	$m(\tilde{\chi}_1^0) = 0$ GeV $m(\tilde{t}_1, \tilde{\ell}) - m(\tilde{\chi}_1^0) = 5$ GeV	1805.01649 2102.10874	
$\tilde{t}_1\tilde{t}_1, \tilde{t}_1 \rightarrow t\tilde{\chi}_1^0, \tilde{\chi}_1^0 \rightarrow Z/h\chi_1^0$		1-2 $e, \mu$	1-4 b	$E_T^{\text{miss}}$	139	$\tilde{t}_1$		0.067-1.18	$m(\tilde{\chi}_1^0) = 500$ GeV	2006.05880	
$\tilde{t}_2\tilde{t}_2, \tilde{t}_2 \rightarrow \tilde{t}_1 + Z$		3 $e, \mu$	1 b	$E_T^{\text{miss}}$	139	$\tilde{t}_2$	Forbidden	0.86	$m(\tilde{\chi}_1^0) = 380$ GeV, $m(\tilde{t}_1) - m(\tilde{\chi}_1^0) = 40$ GeV	2006.05880	
EW direct		$\tilde{\chi}_1^+\tilde{\chi}_2^0$ via WZ	Multiple $\ell$ /jets $ee, \mu\mu$	$\geq 1$ jet	$E_T^{\text{miss}}$ $E_T^{\text{miss}}$	139 139	$\tilde{\chi}_1^+/\tilde{\chi}_2^0$ $\tilde{\chi}_1^+/\tilde{\chi}_2^0$	0.205	0.96	$m(\tilde{\chi}_1^0) = 0$ , wino-bino $m(\tilde{\chi}_1^0) - m(\tilde{\chi}_2^0) = 5$ GeV, wino-bino	2106.01676, ATLAS-CONF-2021-022 1911.12606
		$\tilde{\chi}_1^+\tilde{\chi}_1^0$ via WW	2 $e, \mu$		$E_T^{\text{miss}}$	139	$\tilde{\chi}_1^+$		0.42	$m(\tilde{\chi}_1^0) = 0$ , wino-bino	1908.08215
	$\tilde{\chi}_1^+\tilde{\chi}_1^0$ via Wh	Multiple $\ell$ /jets		$E_T^{\text{miss}}$	139	$\tilde{\chi}_1^+/\tilde{\chi}_2^0$	Forbidden	1.06	$m(\tilde{\chi}_1^0) = 70$ GeV, wino-bino	2004.10894, ATLAS-CONF-2021-022	
	$\tilde{\chi}_1^+\tilde{\chi}_1^0$ via $\tilde{\ell}_L/\tilde{\nu}$	2 $e, \mu$		$E_T^{\text{miss}}$	139	$\tilde{\chi}_1^+$		1.0	$m(\tilde{\chi}_1^0) = 0.5(m(\tilde{\chi}_1^0) + m(\tilde{\chi}_1^0))$	1908.08215	
	$\tilde{\tau}\tilde{\tau}, \tilde{\tau} \rightarrow \tau\tilde{\chi}_1^0$	2 $\tau$		$E_T^{\text{miss}}$	139	$\tilde{\tau}$	[F.L., F.R.L.]	0.16-0.3 0.12-0.39	$m(\tilde{\chi}_1^0) = 0$	1911.06960	
	$\tilde{\chi}_1\tilde{\chi}_1, \tilde{\chi}_1 \rightarrow \ell\tilde{\chi}_1^0$	2 $e, \mu$ $ee, \mu\mu$	0 jets $\geq 1$ jet	$E_T^{\text{miss}}$ $E_T^{\text{miss}}$	139 139	$\tilde{\chi}_1$ $\tilde{\chi}_1$		0.7	$m(\tilde{\chi}_1^0) = 0$	1908.08215	
	$\tilde{H}\tilde{H}, \tilde{H} \rightarrow h\tilde{G}/Z\tilde{G}$	0 $e, \mu$ 4 $e, \mu$ 0 $e, \mu$	$\geq 3$ b 0 jets $\geq 2$ large jets	$E_T^{\text{miss}}$ $E_T^{\text{miss}}$ $E_T^{\text{miss}}$	36.1 139 139	$\tilde{H}$ $\tilde{H}$ $\tilde{H}$	0.13-0.23 0.55 0.45-0.93	0.29-0.88	$\text{BR}(\tilde{H} \rightarrow h\tilde{G}) = 1$ $\text{BR}(\tilde{H} \rightarrow Z\tilde{G}) = 1$ $\text{BR}(\tilde{H} \rightarrow Z\tilde{G}) = 1$	1806.04030 2103.11684 ATLAS-CONF-2021-022	
	Long-lived particles	Direct $\tilde{\chi}_1^0\tilde{\chi}_1^0$ prod., long-lived $\tilde{\chi}_1^0$	Disapp. trk	1 jet	$E_T^{\text{miss}}$	139	$\tilde{\chi}_1^0$ $\tilde{\chi}_1^0$	0.21	0.66	Pure Wino Pure higgsino	ATLAS-CONF-2021-015 ATLAS-CONF-2021-015
		Stable $\tilde{g}$ R-hadron	Multiple			36.1	$\tilde{g}$		2.0		1902.01636, 1808.04095
		Metastable $\tilde{g}$ R-hadron, $\tilde{g} \rightarrow q\bar{q}\chi_1^0$	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
$\tilde{Z}\tilde{Z}, \tilde{Z} \rightarrow t\tilde{G}$		Displ. lep		$E_T^{\text{miss}}$	139	$\tilde{Z}, \tilde{g}$ $\tilde{Z}$	0.34	0.7	$\tau(\tilde{Z}) = 0.1$ ns $\tau(\tilde{Z}) = 0.1$ ns	2011.07812 2011.07812	
RPV	$\tilde{\chi}_1^+\tilde{\chi}_1^0/\tilde{\chi}_1^0, \tilde{\chi}_1^0 \rightarrow Z\ell\ell$	3 $e, \mu$		$E_T^{\text{miss}}$	139	$\tilde{\chi}_1^+/\tilde{\chi}_1^0$	[BR( $Z\tau$ )=1, BR( $Z\mu$ )=1]	0.625	1.05	Pure Wino	2011.10543
	$\tilde{\chi}_1^+\tilde{\chi}_1^0/\tilde{\chi}_2^0 \rightarrow WW/Z\ell\ell\nu$	4 $e, \mu$	0 jets	$E_T^{\text{miss}}$	139	$\tilde{\chi}_1^+/\tilde{\chi}_2^0$	[ $\chi_{123} \neq 0, \chi_{124} \neq 0$ ]	0.95	1.55	$m(\tilde{\chi}_1^0) = 200$ GeV	2103.11684
	$\tilde{g}\tilde{g}, \tilde{g} \rightarrow q\bar{q}\chi_1^0, \tilde{\chi}_1^0 \rightarrow q\bar{q}q$	Multiple	4-5 large jets		36.1	$\tilde{g}$	[ $m(\tilde{\chi}_1^0) = 200$ GeV, 1100 GeV]	1.3	1.9	Large $\chi_{112}$	1804.03568
	$\tilde{u}, \tilde{u} \rightarrow u\chi_1^0, \tilde{\chi}_1^0 \rightarrow tbs$	Multiple			36.1	$\tilde{f}$	[ $\chi_{123}^0 \sim 2\theta, 4 \cdot 10^{-2}$ ]	0.55	1.05	$m(\tilde{\chi}_1^0) = 200$ GeV, bino-like	ATLAS-CONF-2018-003
	$\tilde{u}, \tilde{u} \rightarrow b\tilde{\chi}_1^0, \tilde{\chi}_1^0 \rightarrow bbs$	$\geq 4$ b			139	$\tilde{f}$		0.95	$m(\tilde{\chi}_1^0) = 500$ GeV	2010.01015	
	$\tilde{t}_1\tilde{t}_1, \tilde{t}_1 \rightarrow bbs$	2 jets + 2 b			36.7	$\tilde{f}_1$ [eq. 8]		0.42	0.61		1710.07171
	$\tilde{t}_1\tilde{t}_1, \tilde{t}_1 \rightarrow q\ell$	2 $e, \mu$	2 b		36.1	$\tilde{f}_1$			0.4-1.45	$\text{BR}(\tilde{f}_1 \rightarrow b\ell/\bar{b}\nu) = 20\%$	1710.05544
	1 $\mu$	DV			136	$\tilde{f}_1$	[1e-10 < $\chi_{123}^0$ < 1e-8, 3e-10 < $\chi_{124}^0$ < 3e-9]	1.0	1.6	$\text{BR}(\tilde{f}_1 \rightarrow q\bar{q}) = 100\%, \cos\theta = 1$	2003.11956
	$\tilde{\chi}_1^+\tilde{\chi}_2^0/\tilde{\chi}_1^0, \tilde{\chi}_1^0 \rightarrow tbs, \tilde{\chi}_1^0 \rightarrow bbs$	1-2 $e, \mu$	$\geq 6$ jets		139	$\tilde{\chi}_1^0$		0.2-0.32		Pure higgsino	ATLAS-CONF-2021-007

\*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.