Cross-Sections and Branching Ratios/Snowmass 2001

James Barron, Mihai Dima, Luke Hamilton,
Anthony Johnson, Uriel Nauenberg, Matthew Route,
David Staszak, Matthew Stolte, Tara Turner

University of Colorado, Boulder

July 12, 2001

Part I

Parameters

	Point 1S	Point 2S
m_0	100	1450
$m_{1/2}$	250	300
A_0	0	0
$\tan\beta$	10	10
μ	336.68	222.29
$m_{\tilde{g}}$	595.11	778.59
m_{A^0}	378.83	1451.03
$m_{\tilde{q}_1}$	539.66	1532.73
$m_{\tilde{d}_R}$	519.35	1529.37
$m_{\tilde{u}_R}$	521.48	1529.60
$m_{\tilde{\ell}_1}$	196.59	1455.62
$m_{\tilde{e}_r}$	136.19	1451.08
$m_{\tilde{q}_3}$	498.24	1288.44
$m_{\tilde{b}_r}$	516.31	1516.84
$m_{\tilde{t}_r}$	431.19	985.66
$m_{\tilde{\ell}_3}$	195.94	1449.62
$m_{\tilde{\tau}_r}$	134.21	1438.94
A_t	-468.34	-551.94
A_b	-686.66	-787.52
A_τ	-156.21	-184.74

Part II

Masses

	Point 1S	Point 2S
$\widetilde{\chi}_1^0$	95.7	112
$\widetilde{\chi}_2^0$	175	178
$\widetilde{\chi}_3^0$	343	230
$\widetilde{\chi}_4^0$	364	297
$\widetilde{\chi}_1^\pm$	174	172
$\widetilde{\chi}_2^\pm$	364	296
h^0	113	116
H^0	379	1453
A^0	379	1451
$H^\pm$	387	1455
$\widetilde{\nu}_\ell$	186	1454
$\widetilde{\ell}_R^\pm$	143	1452
$\widetilde{\ell}_L^\pm$	202	1456
$\widetilde{\tau}_1$	135	1439
$\widetilde{\tau}_2$	206	1450
$\widetilde{t}_1$	393	991
$\widetilde{t}_2$	572	1301
$\widetilde{b}_1$	494	1290
$\widetilde{b}_2$	524	1517
$\widetilde{q}_R$	520	1529
$\widetilde{q}_L$	537	1532
$\widetilde{g}$	595	779

Part III

Cross sections and decay modes

1 Point 1S

1.1 Cross sections(fb)

	500 GeV		750 GeV		800 GeV		1000 GeV		1200 GeV	
	80% L	80% R	80% L	80% R	80% L	80% R	80% L	80% R	80% L	80% R
$\tilde{\chi}_1^0\tilde{\chi}_2^0$	106	24.5	79.3	17.2			54	11.4		
$\tilde{\chi}_1^0\tilde{\chi}_3^0$	3.5	16.0	2.3	8.7			1.4	4.7		
$\tilde{\chi}_1^0\tilde{\chi}_4^0$	2.0	4.2	5.9	10.0			4.4	6.9		
$\tilde{\chi}_2^0\tilde{\chi}_2^0$	139	15.6	142	15.8			103	11.5		
$\tilde{\chi}_2^0\tilde{\chi}_3^0$			16.8	7.4			9.9	4.6	6.9	3.3
$\tilde{\chi}_2^0\tilde{\chi}_4^0$			17.7	2.1			16.4	2.0	13.3	1.2
$\tilde{\chi}_3^0\tilde{\chi}_3^0$					.005	.005	.009	.009	.009	.008
$\tilde{\chi}_3^0\tilde{\chi}_4^0$										
$\tilde{\chi}_1^+\tilde{\chi}_1^-$	312	35.6	319	36.4			235	26.8		
$\tilde{\chi}_1^+\tilde{\chi}_2^-$			40.9	10.2			27.5	6.7	20.1	4.9
$\tilde{\chi}_2^+\tilde{\chi}_2^-$					139	41.0	138	39.7	107	30.4
$\tilde{\nu}_e\overline{\tilde{\nu}}_e$	935	116	1260	151			1069	127		
$\tilde{\nu}_\mu\overline{\tilde{\nu}}_\mu$	17.7	14.0	16.5	13.1			11.2	8.9		
$\tilde{\nu}_\tau\overline{\tilde{\nu}}_\tau$	17.9	14.2	16.5	13.1			11.2	8.9		
$\tilde{e}_L^+\tilde{e}_L^-$	105	16.8	254	37.9			255	35.4		
$\tilde{e}_R^+\tilde{e}_R^-$	81	546	71	523			54.4	416		
$\tilde{e}_R^-\tilde{e}_L^+$	16.8	151	9.6	87						
$\tilde{e}_R^+\tilde{e}_L^-$	180	16.8	86	9.6			52.2	5.8		
$\tilde{\mu}_R^+\tilde{\mu}_R^-$	29.7	87.4	19.1	55.2			12.0	34.5		
$\tilde{\mu}_L^+\tilde{\mu}_L^-$	37.5	11.5	48.4	15.2			34.7	11.0		

1.2 Point 1S: Branching ratios

$\boxed{\widetilde{\chi}_2^0}$

$M(\widetilde{\chi}_2^0) = 175.1$ GeV

$\widetilde{\chi}_2^0$ branching ratios

mode	fraction
$\widetilde{\tau}_1^{\pm}\tau^{\pm}$	83.4%
$\widetilde{\mu}_R^{\pm}\mu^{\mp}$	8.1
$\widetilde{e}_R^{\pm}e^{\mp}$	8.1

$\boxed{\widetilde{\chi}_3^0}$

$M(\widetilde{\chi}_3^0) = 343.3$ GeV

$\widetilde{\chi}_3^0$ branching ratios

mode	fraction
$\widetilde{\chi}_1^{\pm}W^{\mp}$	59.4%
$\widetilde{\chi}_2^0 Z^0$	20.5
$\widetilde{\chi}_1^0 Z^0$	11.8
$\widetilde{\chi}_1^0 h^0$	2.0
$\widetilde{\chi}_2^0 h^0$	0.94

$\boxed{\widetilde{\chi}_4^0}$

$M(\widetilde{\chi}_4^0) = 364.1$ GeV

$\widetilde{\chi}_4^0$ branching ratios

mode	fraction
$\widetilde{\chi}_1^{\pm}W^{\mp}$	51.6%
$\nu_\ell\overline{\widetilde{\nu}}_\ell$	16.6
$\widetilde{\chi}_2^0 h^0$	11.9
$\widetilde{\chi}_1^0 h^0$	6.4
$\widetilde{\ell}_L^{\pm}l^{\mp}$	4.4
$\widetilde{\tau}_2^{\pm}\tau^{\pm}$	3.3
$\widetilde{\chi}_1^0 Z^0$	2.0
$\widetilde{\chi}_2^0 Z^0$	1.7

$\boxed{\widetilde{\chi}_1^+}$

$M(\widetilde{\chi}_1^+) = 174.6$ GeV

$\widetilde{\chi}_1^+$ branching ratios

mode	fraction
$\widetilde{\tau}_1^+\nu_\tau$	96.9%
$\widetilde{\chi}_1^0\ell^+$	1.2
$\widetilde{\chi}_1^0 q\bar{q}'$	1.9

$\boxed{\widetilde{\chi}_2^+}$

$M(\widetilde{\chi}_2^+) = 364.4$ GeV

$\widetilde{\chi}_2^+$ branching ratios

mode	fraction
$\widetilde{\chi}_2^0 W^+$	29.5%
$\widetilde{\chi}_1^+ Z^0$	23.7
$\widetilde{\chi}_1^+ h^0$	15.4
$\widetilde{\ell}_L^+\nu_l$	11.5
$\widetilde{\chi}_1^0 W^+$	6.2
$\widetilde{\tau}_2^+\nu_\tau$	6.1
$\ell^+\overline{\widetilde{\nu}}_\ell$	4.6
$\tau^+\overline{\widetilde{\nu}}_\tau$	3.0

$\boxed{h^0}$

$M(h^0) = 112.9$ GeV

h^0 branching ratios

mode	fraction
$q\bar{q}$	88.7%
$b\bar{b}$	85.3
$c\bar{c}$	3.4
$\tau^-\tau^+$	5.1
gg	2.6

$\boxed{H^0}$

$M(H^0) = 379.4$ GeV

H^0 branching ratios

mode	fraction
$q\bar{q}$	84.9%
$b\bar{b}$	82.9
$t\bar{t}$	2.0
$\tau^-\tau^+$	6.0
$\widetilde{\chi}_1^0\widetilde{\chi}_2^0$	3.6
$\widetilde{\chi}_1^+\widetilde{\chi}_1^-$	2.2
$\widetilde{\chi}_1^0\widetilde{\chi}_1^0$	1.3

$\boxed{A^0}$

$M(A^0) = 378.8$ GeV

A^0 branching ratios

mode	fraction
$q\bar{q}$	77.6%
$b\bar{b}$	69.3
$t\bar{t}$	8.3
$\widetilde{\chi}_1^0\widetilde{\chi}_2^0$	7.2
$\widetilde{\chi}_2^0\widetilde{\chi}_2^0$	5.6
$\tau^-\tau^+$	5.0
$\widetilde{\chi}_1^+\widetilde{\chi}_1^-$	2.3
$\widetilde{\chi}_1^0\widetilde{\chi}_1^0$	1.7

$\boxed{H^+}$

$M(H^+) = 387.3$ GeV

H^+ branching ratios

mode	fraction
$t\bar{b}$	76.5%
$\widetilde{\chi}_1^+\widetilde{\chi}_1^0$	14.4
$\nu_\tau\tau^+$	7.9

$\boxed{\tilde{\nu}_\ell}$

$M(\tilde{\nu}_\ell) = 185.9$ GeV

$\tilde{\nu}_\ell$ branching ratios

mode	fraction
$\tilde{\chi}_1^0 \nu_\ell$	84.5%
$\tilde{\chi}_1^+ \ell^-$	11.3
$\tilde{\chi}_2^0 \nu$	4.1

$\boxed{\tilde{\ell}_R^-}$

$M(\tilde{\ell}_R^-) = 142.9$ GeV

$\tilde{\ell}_R^-$ branching ratios

mode	fraction
$\tilde{\chi}_1^0 \ell^-$	100%

$\boxed{\tilde{\tau}_1^-}$

$M(\tilde{\tau}_1^-) = 134.7$ GeV

$\tilde{\tau}_1^-$ branching ratios

mode	fraction
$\tilde{\chi}_1^0 \tau^-$	100%

$\boxed{\tilde{\ell}_L^-}$

$M(\tilde{\ell}_L^-) = 202.1$ GeV

$\tilde{\ell}_L^-$ branching ratios

mode	fraction
$\tilde{\chi}_1^0 \ell^-$	45.4%
$\tilde{\chi}_1^- \nu_\ell$	34.4
$\tilde{\chi}_2^0 \ell^-$	20.3

$\boxed{\tilde{\tau}_2^-}$

$M(\tilde{\tau}_2^-) = 205.8$ GeV

$\tilde{\tau}_2^-$ branching ratios

mode	fraction
$\tilde{\chi}_1^0 \tau^-$	49.1%
$\tilde{\chi}_1^- \nu_\tau$	31.9
$\tilde{\chi}_2^0 \tau^-$	19.0

$\boxed{\tilde{c}_L(\tilde{u}_L)}$

$M(\tilde{c}_L(\tilde{u}_L)) = 537.1$ GeV

$\tilde{c}_L(\tilde{u}_L)$ branching ratios

mode	fraction
$\tilde{\chi}_1^+ d(s)$	64.8%
$\tilde{\chi}_2^0 u(c)$	31.5
$\tilde{\chi}_2^+ d(s)$	1.7
$\tilde{\chi}_4^0 u(c)$	1.4

$\boxed{\tilde{s}_L(\tilde{d}_L)}$

$M(\tilde{s}_L(\tilde{d}_L)) = 542.9$ GeV

$\tilde{s}_L(\tilde{d}_L)$ branching ratios

mode	fraction
$\tilde{\chi}_1^- u(c)$	59.7%
$\tilde{\chi}_2^0 d(s)$	30.5
$\tilde{\chi}_2^- u(c)$	5.2
$\tilde{\chi}_1^0 d(s)$	2.5
$\tilde{\chi}_4^0 d(s)$	1.9

$\boxed{\tilde{b}_1}$

$M(\tilde{b}_1) = 494.3$ GeV

$\tilde{b}_1$ branching ratios

mode	fraction
$\tilde{\chi}_1^- t$	45.8%
$\tilde{\chi}_2^0 b$	37.9
$\tilde{\chi}_1^0 b$	7.1
$W^- \tilde{t}_1$	7.0
$\tilde{\chi}_4^0 b$	1.1
$\tilde{\chi}_3^0 b$	1.0

$\boxed{\tilde{c}_R(\tilde{u}_R)}$

$M(\tilde{c}_R(\tilde{u}_R)) = 520.3$ GeV

$\tilde{c}_R(\tilde{u}_R)$ branching ratios

mode	fraction
$\tilde{\chi}_1^0 u(c)$	98.2%
$\tilde{\chi}_2^0 u(c)$	1.2

$\boxed{\tilde{s}_R(\tilde{d}_R)}$

$M(\tilde{s}_R(\tilde{d}_R)) = 520.0$ GeV

$\tilde{s}_R(\tilde{d}_R)$ branching ratios

mode	fraction
$\tilde{\chi}_1^0 d(s)$	98.3%
$\tilde{\chi}_2^0 d(s)$	1.2

$\boxed{\widetilde{b}_2}$

$M(\widetilde{b}_2) = 524.1$ GeV

$\widetilde{b}_2$ branching ratios

mode	fraction
$W^-\widetilde{t}_1$	25.8%
$\widetilde{\chi}_1^- t$	24.2
$\widetilde{\chi}_2^0 b$	19.0
$\widetilde{\chi}_1^0 b$	14.6
$\widetilde{\chi}_4^0 b$	9.6
$\widetilde{\chi}_3^0 b$	6.7

$\boxed{\widetilde{t}_1}$

$M(\widetilde{t}_1) = 393.3$ GeV

$\widetilde{t}_1$ branching ratios

mode	fraction
$\widetilde{\chi}_1^+ b$	69.3%
$\widetilde{\chi}_1^0 t$	16.5
$\widetilde{\chi}_2^0 t$	11.5
$\widetilde{\chi}_2^+ b$	2.8

$\boxed{\widetilde{t}_2}$

$M(\widetilde{t}_2) = 571.9$ GeV

$\widetilde{t}_2$ branching ratios

mode	fraction
$\widetilde{\chi}_2^+ b$	23.9%
$\widetilde{\chi}_4^0 t$	22.5
$\widetilde{\chi}_1^+ b$	18.4
$Z^0\widetilde{t}_1$	16.4
$\widetilde{\chi}_2^0 t$	7.5
$\widetilde{\chi}_3^0 t$	5.2
$h^0\widetilde{t}_1$	3.3
$\widetilde{\chi}_1^0 t$	2.7

$\boxed{\widetilde{g}}$

$M(\widetilde{g}) = 595.1$ GeV

$\widetilde{g}$ branching ratios

mode	fraction
$q\overline{q}' + c.c.$	66.8%
$\widetilde{b}_1\overline{b} + c.c.$	18.4
$\widetilde{b}_2\overline{b} + c.c.$	9.6
$\widetilde{t}_1\bar{t} + c.c.$	5.2

Part IV
Cross sections and decay modes

2 Point 2S

2.1 Cross sections(fb)

	500 GeV		750 GeV		800 GeV		1000 GeV		1200 GeV	
	80% L	80% R	80% L	80% R	80% L	80% R	80% L	80% R	80% L	80% R
$\widetilde{\chi}_1^0\widetilde{\chi}_2^0$	2	2	2	3			2	3		
$\widetilde{\chi}_2^0\widetilde{\chi}_2^0$	.4	.2	1.4	.3			3	.4		
$\widetilde{\chi}_1^0\widetilde{\chi}_3^0$	24.8	50	12.4	13.9			7.5	11.9		
$\widetilde{\chi}_1^0\widetilde{\chi}_4^0$	.066	.11	.27	.31			.49	.44		
$\widetilde{\chi}_2^0\widetilde{\chi}_3^0$	75	58	41	31			23.8	17.8		
$\widetilde{\chi}_2^0\widetilde{\chi}_4^0$	.043	.0067	1.3	.18			2.7	.26		
$\widetilde{\chi}_3^0\widetilde{\chi}_3^0$	0.012	0.010	0.45	0.36			0.036	0.030		
$\widetilde{\chi}_1^+\widetilde{\chi}_1^-$	934	140	411	65			212	34.8		
$\widetilde{\chi}_1^+\widetilde{\chi}_2^-$	18.4	19.4	11.2	15.8			5.6	8.2		
$\widetilde{\chi}_2^+\widetilde{\chi}_2^-$			379	52.4			233	33.0	158	22.8

2.2 Point 2S: Branching ratios

$\boxed{\widetilde{\chi}_2^0}$

$M(\widetilde{\chi}_2^0) = 178.4$ GeV

$\widetilde{\chi}_2^0$ branching ratios

mode	fraction
$\widetilde{\chi}_1^0 q\overline{q}$	69.5%
$\widetilde{\chi}_1^0 d\overline{d}$	15.4
$\widetilde{\chi}_1^0 s\overline{s}$	15.4
$\widetilde{\chi}_1^0 b\overline{b}$	14.9
$\widetilde{\chi}_1^0 c\overline{c}$	11.9
$\widetilde{\chi}_1^0 u\overline{u}$	11.9
$\widetilde{\chi}_1^0 \nu\overline{\nu}$	20.7
$\widetilde{\chi}_1^0 \ell^+\ell^-$	9.9

$\boxed{\widetilde{\chi}_3^0}$

$M(\widetilde{\chi}_3^0) = 230.2$ GeV

$\widetilde{\chi}_3^0$ branching ratios

mode	fraction
$\widetilde{\chi}_1^0 Z^0$	98%

$\boxed{\widetilde{\chi}_4^0}$

$M(\widetilde{\chi}_4^0) = 297.1$ GeV

$\widetilde{\chi}_4^0$ branching ratios

mode	fraction
$\widetilde{\chi}_1^\pm W^\mp$	94.4%
$\widetilde{\chi}_1^0 h^0$	3.7

$\boxed{\widetilde{\chi}_1^+}$

$M(\widetilde{\chi}_1^+) = 172.0$ GeV

$\widetilde{\chi}_1^+$ branching ratios

mode	fraction
$\widetilde{\chi}_1^0 q\overline{q}'$	66.6%
$\widetilde{\chi}_1^0 c\overline{s}$	33.3
$\widetilde{\chi}_1^0 u\overline{d}$	33.3
$\widetilde{\chi}_1^0 \ell^+\nu_\ell$	33.3

$\boxed{\widetilde{\chi}_2^+}$

$M(\widetilde{\chi}_2^+) = 296.3$ GeV

$\widetilde{\chi}_2^+$ branching ratios

mode	fraction
$\widetilde{\chi}_2^0 W^+$	60.4%
$\widetilde{\chi}_1^+ Z^0$	38.0

$\boxed{h^0}$

$M(h^0) = 115.7$ GeV

h^0 branching ratios

mode	fraction
$q\overline{q}$	86.0%
$b\overline{b}$	82.0
$c\overline{c}$	4.0
$\tau^-\tau^+$	4.9
gg	3.1

$\boxed{H^0}$

$M(H^0) = 1453.0$ GeV

H^0 branching ratios

mode	fraction
$\widetilde{\chi}_1^\pm \widetilde{\chi}_2^\mp$	28.6%
$q\overline{q}$	18.6
$b\overline{b}$	15.3
$t\overline{t}$	3.3
$\widetilde{\chi}_1^+ \widetilde{\chi}_1^-$	15.5
$\widetilde{\chi}_3^0 \widetilde{\chi}_4^0$	10.1
$\widetilde{\chi}_1^0 \widetilde{\chi}_3^0$	4.9
$\widetilde{\chi}_1^0 \widetilde{\chi}_2^0$	4.7
$\widetilde{\chi}_2^+ \widetilde{\chi}_2^-$	4.3
$\widetilde{\chi}_4^0 \widetilde{\chi}_4^0$	3.4
$\widetilde{\chi}_2^0 \widetilde{\chi}_2^0$	2.2
$\widetilde{\chi}_2^0 \widetilde{\chi}_3^0$	2.0
$\widetilde{\chi}_1^0 \widetilde{\chi}_1^0$	2.0
$\tau^-\tau^+$	1.3

$\boxed{A^0}$

$M(A^0) = 1451.0$ GeV

A^0 branching ratios

mode	fraction
$\widetilde{\chi}_1^+ \widetilde{\chi}_1^-$	20.6%
$q\overline{q}$	19
$b\overline{b}$	15.7
$t\overline{t}$	3.3
$\widetilde{\chi}_1^\pm \widetilde{\chi}_2^\pm$	18.0
$\widetilde{\chi}_2^+ \widetilde{\chi}_2^-$	8.3
$\widetilde{\chi}_3^0 \widetilde{\chi}_4^0$	7.0
$\widetilde{\chi}_4^0 \widetilde{\chi}_4^0$	7.0
$\widetilde{\chi}_1^0 \widetilde{\chi}_2^0$	6.8
$\widetilde{\chi}_2^0 \widetilde{\chi}_2^0$	3.3
$\widetilde{\chi}_1^0 \widetilde{\chi}_3^0$	2.9
$\widetilde{\chi}_1^0 \widetilde{\chi}_1^0$	2.6
$\widetilde{\chi}_2^0 \widetilde{\chi}_4^0$	1.2

$\boxed{H^+}$

$M(H^+) = 1455.1$ GeV

H^+ branching ratios

mode	fraction
$\widetilde{\chi}_2^+\widetilde{\chi}_2^0$	28.5%
$\widetilde{\chi}_1^+\widetilde{\chi}_4^0$	18.6
$t\bar{b}$	17.1
$\widetilde{\chi}_2^+\widetilde{\chi}_3^0$	13.3
$\widetilde{\chi}_1^+\widetilde{\chi}_3^0$	9.8
$\widetilde{\chi}_1^+\widetilde{\chi}_1^0$	8.3

$\boxed{\widetilde{\nu}_\ell}$

$M(\widetilde{\nu}_\ell) = 1454.2$ GeV

$\widetilde{\nu}_\ell$ branching ratios

mode	fraction
$\widetilde{\chi}_1^+\ell^-$	34.7%
$\widetilde{\chi}_2^+\ell^-$	25.9
$\widetilde{\chi}_4^0\nu_\ell$	19
$\widetilde{\chi}_1^0\nu_\ell$	13.1
$\widetilde{\chi}_2^0\nu_\ell$	6.6

$\boxed{\widetilde{\ell}_R^-}$

$M(\widetilde{\ell}_R^-) = 1451.7$ GeV

$\widetilde{\ell}_R^-$ branching ratios

mode	fraction
$\widetilde{\chi}_1^0\ell^-$	84.4%
$\widetilde{\chi}_2^0\ell^-$	13.1
$\widetilde{\chi}_4^0\ell^-$	1.9

$\boxed{\widetilde{\tau}_1^-}$

$M(\widetilde{\tau}_1^-) = 1439.4$ GeV

$\widetilde{\tau}_1^-$ branching ratios

mode	fraction
$\widetilde{\chi}_1^0\tau^-$	76.3%
$\widetilde{\chi}_2^0\tau^-$	14.4
$\widetilde{\chi}_1^-\widetilde{\nu}_\tau$	6.0
$\widetilde{\chi}_3^0\tau^-$	1.8
$\widetilde{\chi}_4^0\tau^-$	1.4

$\boxed{\widetilde{\ell}_L^-}$

$M(\widetilde{\ell}_L^-) = 1456.4$ GeV

$\widetilde{\ell}_L^-$ branching ratios

mode	fraction
$\widetilde{\chi}_2^-\nu_\ell$	38.7%
$\widetilde{\chi}_2^0\ell^-$	23.1
$\widetilde{\chi}_1^-\nu_\ell$	21.4
$\widetilde{\chi}_4^0\ell^-$	12.4
$\widetilde{\chi}_1^0\ell^-$	4.1

$\boxed{\widetilde{\tau}_2^-}$

$M(\widetilde{\tau}_2^-) = 1450.6$ GeV

$\widetilde{\tau}_2^-$ branching ratios

mode	fraction
$\widetilde{\chi}_2^-\widetilde{\nu}_\tau$	39.0%
$\widetilde{\chi}_2^0\tau^-$	22.7
$\widetilde{\chi}_1^-\widetilde{\nu}_\tau$	20.0
$\widetilde{\chi}_4^0\tau^-$	13.0
$\widetilde{\chi}_1^0\tau^-$	4.4
$\widetilde{\chi}_3^0\tau^-$	1.0

$\boxed{\widetilde{t}_1}$

$M(\widetilde{t}_1) = 991.2$ GeV

$\widetilde{t}_1$ branching ratios

mode	fraction
$\widetilde{\chi}_1^+b$	23.7%
$\widetilde{\chi}_3^0t$	21.5
$\widetilde{\chi}_2^+b$	18.3
$\widetilde{g}t$	11.5
$\widetilde{\chi}_2^0t$	9.5
$\widetilde{\chi}_4^0t$	8.3
$\widetilde{\chi}_1^0t$	7.1

$\boxed{\widetilde{c}_L(\widetilde{u}_L)}$

$M(\widetilde{c}_L(\widetilde{u}_L)) = 1531.8$ GeV

$\widetilde{c}_L(\widetilde{u}_L)$ branching ratios

mode	fraction
$\widetilde{g}u(c)$	72.7%
$\widetilde{\chi}_1^+d(s)$	10.3
$\widetilde{\chi}_2^+d(s)$	7.7
$\widetilde{\chi}_2^0u(c)$	4.9
$\widetilde{\chi}_4^0u(c)$	4.3

$\boxed{\widetilde{s}_L(\widetilde{d}_L)}$

$M(\widetilde{s}_L(\widetilde{d}_L)) = 1533.9$ GeV

$\widetilde{s}_L(\widetilde{d}_L)$ branching ratios

mode	fraction
$\widetilde{g}d(s)$	72.9%
$\widetilde{\chi}_2^-u(c)$	11.5
$\widetilde{\chi}_1^-u(c)$	6.3
$\widetilde{\chi}_4^0d(s)$	5.0
$\widetilde{\chi}_2^0d(s)$	3.3

$\boxed{\widetilde{b}_1}$

$M(\widetilde{b}_1) = 1289.7$ GeV

$\widetilde{b}_1$ branching ratios

mode	fraction
$\widetilde{g}b$	47.5%
$\widetilde{\chi}_2^- t$	24.8
$\widetilde{\chi}_1^- t$	16.7
$\widetilde{\chi}_4^0 b$	4.4
$\widetilde{\chi}_2^0 b$	3.1
$W^- \widetilde{t}_1$	2.0

$\boxed{\widetilde{s}_R(\widetilde{d}_R)}$

$M(\widetilde{s}_R(\widetilde{d}_R)) = 1529.6$ GeV

$\widetilde{s}_R(\widetilde{d}_R)$ branching ratios

mode	fraction
$\widetilde{g}d(s)$	98.3%
$\widetilde{\chi}_1^0 d(s)$	1.4

$\boxed{\widetilde{t}_2}$

$M(\widetilde{t}_2) = 1300.5$ GeV

$\widetilde{t}_2$ branching ratios

mode	fraction
$\widetilde{g}t$	46.2%
$\widetilde{\chi}_3^0 t$	13.6
$\widetilde{\chi}_4^0 t$	12.8
$\widetilde{\chi}_2^+ b$	9.4
$\widetilde{\chi}_1^+ b$	7.0
$h^0 \widetilde{t}_1$	1.4
$Z^0 \widetilde{t}_1$	1.1

$\boxed{\widetilde{c}_R(\widetilde{u}_R)}$

$M(\widetilde{c}_R(\widetilde{u}_R)) = 1529.2$ GeV

$\widetilde{c}_R(\widetilde{u}_R)$ branching ratios

mode	fraction
$\widetilde{g}u(c)$	93.5%
$\widetilde{\chi}_1^0 u(c)$	5.4

$\boxed{\widetilde{b}_2}$

$M(\widetilde{b}_2) = 1517.1$ GeV

$\widetilde{b}_2$ branching ratios

mode	fraction
$\widetilde{g}b$	94.9%
$\widetilde{\chi}_1^0 b$	1.6
$\widetilde{\chi}_1^- t$	1.0

$\boxed{\widetilde{g}}$

$M(\widetilde{g}) = 778.6$ GeV

$\widetilde{g}$ branching ratios

mode	fraction
$\widetilde{\chi}_1^+ q\overline{q}' + c.c.$	59.2%
$\widetilde{\chi}_2^0 q\overline{q}$	12.4
$\widetilde{\chi}_4^0 q\overline{q}$	10
$\widetilde{\chi}_3^0 q\overline{q}$	7.5
$\widetilde{\chi}_1^0 q\overline{q}$	7.0