

Points taken from hep-ph/0502197

GENERAL COMMENTS:

For low m_0 relatively low $\sqrt{m_{\text{half}}}$ is forbidden by the Higgs mass bound from LEP. This kills the bulk region. For relatively large $|A_0|$ the Higgs mass increases for given m_0 and $\sqrt{m_{\text{half}}}$ the bulk region is resurrected.

bulk_7_220_2m (approximately lower edge of bulk for $m_0=70, m_{\text{half}}=220, A_0=-200$)

$M_0, M_{(1/2)}, A_0, \tan(\beta), \text{sgn}(\mu), M_t =$
70.000 225.000 -200.000 10.000 1.0 175.000

$M(\text{GL}) = 554.89$
 $M(\text{UL}) = 508.90$
 $M(\text{B1}) = 460.30 \quad M(\text{B2}) = 486.47 \quad M(\text{T1}) = 342.03$
 $M(\text{SN}) = 155.52 \quad M(\text{EL}) = 177.00 \quad M(\text{ER}) = 117.36$
 $M(\text{NTAU}) = 154.24 \quad M(\text{TAU1}) = 104.74 \quad M(\text{TAU2}) = 181.03$
 $M(\text{Z1}) = -85.38 \quad M(\text{Z2}) = -162.85 \quad M(\text{Z3}) = 347.68 \quad M(\text{Z4}) =$
 -365.96
 $M(\text{W1}) = -161.32 \quad M(\text{W2}) = -365.92$
 $M(\text{HL}) = 113.84 \quad M(\text{HH}) = 369.98 \quad M(\text{HA}) = 369.73 \quad M(\text{H+}) =$
378.13

We are in the Bulk

GLSS --> BB1 BT 0.63652E+00 0.10360E+00
GLSS --> BT1 BB 0.63652E+00 0.10360E+00

GLSS	-->	BB2	BT	0.38493E+00	0.62648E-01
GLSS	-->	BT2	BB	0.38493E+00	0.62648E-01
GLSS	-->	TB1	TP	0.32995E+00	0.53701E-01
GLSS	-->	TP1	TB	0.32995E+00	0.53701E-01
				TOTAL	0.42
BT1	-->	Z1SS	BT	0.15574E+00	0.47484E-01
BT1	-->	Z2SS	BT	0.11743E+01	0.35804E+00
BT1	-->	Z3SS	BT	0.11114E-01	0.33887E-02
BT1	-->	Z4SS	BT	0.20680E-01	0.63052E-02
BT1	-->	W1SS-	TP	0.13015E+01	0.39684E+00
BT1	-->	W-	TP1	0.61642E+00	0.18795E+00
TP1	-->	Z1SS	TP	0.25307E+00	0.18716E+00
TP1	-->	Z2SS	TP	0.43763E-01	0.32366E-01
TP1	-->	W1SS+	BT	0.10553E+01	0.78047E+00
BT2	-->	Z1SS	BT	0.20062E+00	0.25112E+00
BT2	-->	Z2SS	BT	0.13282E+00	0.16625E+00
BT2	-->	Z3SS	BT	0.28418E-01	0.35572E-01
BT2	-->	Z4SS	BT	0.38819E-01	0.48591E-01
BT2	-->	W1SS-	TP	0.14860E+00	0.18600E+00
BT2	-->	W-	TP1	0.24962E+00	0.31245E+00
NUEL	-->	Z1SS	NUE	0.11485E+00	0.99993E+00
NUML	-->	Z1SS	NUM	0.11485E+00	0.99993E+00
NUTL	-->	Z1SS	NUT	0.11227E+00	0.99954E+00
Z2SS	-->	TAU1+	TAU-	0.15133E-01	0.31096E+00
Z2SS	-->	NUEL	ANUE	0.21367E-02	0.43908E-01
Z2SS	-->	ANUEL	NUE	0.21367E-02	0.43908E-01

Z2SS	-->	NUML	ANUM	0.21367E-02	0.43908E-01
Z2SS	-->	ANUML	NUM	0.21367E-02	0.43908E-01
Z2SS	-->	NUTL	ANUT	0.29190E-02	0.59981E-01
Z2SS	-->	ANUTL	NUT	0.29190E-02	0.59981E-01
W1SS+	-->	NUEL	E+	0.30563E-02	0.87045E-01
W1SS+	-->	NUML	MU+	0.30558E-02	0.87030E-01
W1SS+	-->	NUTL	TAU+	0.45775E-02	0.13037E+00
W1SS+	-->	TAU1+	NUT	0.24318E-01	0.69259E+00

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co_7_22_5m

M(GL)	=	543.53			
M(UL)	=	499.37	M(UR)	=	485.25
			M(DL)	=	506.06
			M(DR)	=	485.46
M(B1)	=	431.52	M(B2)	=	471.85
			M(T1)	=	260.67
			M(T2)	=	514.25
M(SN)	=	152.71	M(EL)	=	173.79
			M(ER)	=	116.25
M(NTAU)	=	148.87	M(TAU1)	=	90.43
			M(TAU2)	=	178.30
M(Z1)	=	-84.44	M(Z2)	=	-163.53
			M(Z3)	=	404.98
			M(Z4)	=	-420.60
M(W1)	=	-162.71	M(W2)	=	-420.30
M(HL)	=	117.80	M(HH)	=	421.99
			M(HA)	=	422.19
			M(H+)	=	429.46

Note that as A_0 is changed to -500 we enter into the coannihilation region
 Moreover stau1 violates LEP bound.

GLSS	-->	BB1	BT	0.89324E+00	0.10985E+00
GLSS	-->	BT1	BB	0.89324E+00	0.10985E+00
GLSS	-->	BB2	BT	0.42742E+00	0.52563E-01
GLSS	-->	BT2	BB	0.42742E+00	0.52563E-01
GLSS	-->	TB1	TP	0.11173E+01	0.13741E+00
GLSS	-->	TP1	TB	0.11173E+01	0.13741E+00
				TOTAL	0.60
BT1	-->	Z1SS	BT	0.11903E+00	0.23751E-01
BT1	-->	Z2SS	BT	0.11456E+01	0.22857E+00
BT1	-->	Z3SS	BT	0.79204E-03	0.15804E-03
BT1	-->	Z4SS	BT	0.32831E-03	0.65507E-04
BT1	-->	W1SS-	TP	0.11329E+01	0.22605E+00
BT1	-->	W-	TP1	0.26131E+01	0.52140E+00
TP1	-->	W1SS+	BT	0.41201E+00	0.10000E+01
BT2	-->	Z1SS	BT	0.21164E+00	0.22602E+00
BT2	-->	Z2SS	BT	0.86607E-01	0.92491E-01
BT2	-->	Z3SS	BT	0.69984E-02	0.74738E-02
BT2	-->	Z4SS	BT	0.65854E-02	0.70328E-02
BT2	-->	W1SS-	TP	0.93670E-01	0.10003E+00
BT2	-->	W-	TP1	0.53088E+00	0.56695E+00
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Z2SS	-->	TAU1-	TAU+	0.25793E-01	0.28427E+00
Z2SS	-->	TAU1+	TAU-	0.25793E-01	0.28427E+00
Z2SS	-->	NUEL	ANUE	0.48758E-02	0.53736E-01
Z2SS	-->	ANUEL	NUE	0.48758E-02	0.53736E-01
Z2SS	-->	NUML	ANUM	0.48758E-02	0.53736E-01
Z2SS	-->	ANUML	NUM	0.48758E-02	0.53736E-01
Z2SS	-->	NUTL	ANUT	0.87249E-02	0.96157E-01

Z2SS	-->	ANUTL	NUT	0.87249E-02	0.96157E-01
W1SS+	-->	NUEL	E+	0.92581E-02	0.11352E+00
W1SS+	-->	NUML	MU+	0.92576E-02	0.11352E+00
W1SS+	-->	NUTL	TAU+	0.17571E-01	0.21546E+00
W1SS+	-->	TAU1+	NUT	0.45378E-01	0.55643E+00

co_7_35_0m

M(GL) = 832.33
M(UL) = 759.65 M(UR) = 734.90 M(DL) = 764.07 M(DR) =
733.04
M(B1) = 698.07 M(B2) = 723.02 M(T1) = 573.86 M(T2) =
749.49
M(SN) = 238.33 M(EL) = 255.17 M(ER) = 153.99
M(NTAU)= 237.58 M(TAU1)= 146.47 M(TAU2)= 257.01
M(Z1) = -136.98 M(Z2) = -263.62 M(Z3) = 466.47 M(Z4) =
-483.38
M(W1) = -262.24 M(W2) = -483.41
M(HL) = 115.75 M(HH) = 512.70 M(HA) = 512.38 M(H+) =
518.58

GLSS	-->	BB1	BT	0.83889E+00	0.80826E-01
GLSS	-->	BT1	BB	0.83889E+00	0.80826E-01
GLSS	-->	BB2	BT	0.60690E+00	0.58474E-01
GLSS	-->	BT2	BB	0.60690E+00	0.58474E-01
GLSS	-->	TB1	TP	0.81816E+00	0.78828E-01
GLSS	-->	TP1	TB	0.81816E+00	0.78828E-01
BT1	-->	Z1SS	BT	0.17907E+00	0.25018E-01
BT1	-->	Z2SS	BT	0.18214E+01	0.25446E+00
BT1	-->	Z3SS	BT	0.29364E-01	0.41023E-02

BT1	-->	Z4SS	BT	0.58897E-01	0.82284E-02
BT1	-->	W1SS-	TP	0.28208E+01	0.39409E+00
BT1	-->	W2SS-	TP	0.15528E+01	0.21693E+00
BT1	-->	W-	TP1	0.69549E+00	0.97165E-01
TP1	-->	Z1SS	TP	0.78495E+00	0.24678E+00
TP1	-->	Z2SS	TP	0.47204E+00	0.14840E+00
TP1	-->	W1SS+	BT	0.15333E+01	0.48204E+00
TP1	-->	W2SS+	BT	0.39051E+00	0.12277E+00
BT2	-->	Z1SS	BT	0.32015E+00	0.21963E+00
BT2	-->	Z2SS	BT	0.14523E+00	0.99631E-01
BT2	-->	Z3SS	BT	0.51752E-01	0.35503E-01
BT2	-->	Z4SS	BT	0.77525E-01	0.53183E-01
BT2	-->	W1SS-	TP	0.22138E+00	0.15187E+00
BT2	-->	W2SS-	TP	0.45674E+00	0.31333E+00
BT2	-->	W-	TP1	0.18492E+00	0.12686E+00

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Z2SS	-->	TAU1-	TAU+	0.14147E-01	0.94543E-01
Z2SS	-->	TAU1+	TAU-	0.14147E-01	0.94543E-01
Z2SS	-->	TAU2-	TAU+	0.12976E-02	0.86713E-02
Z2SS	-->	TAU2+	TAU-	0.12976E-02	0.86713E-02
Z2SS	-->	NUEL	ANUE	0.15911E-01	0.10633E+00
Z2SS	-->	ANUEL	NUE	0.15911E-01	0.10633E+00
Z2SS	-->	NUML	ANUM	0.15911E-01	0.10633E+00
Z2SS	-->	ANUML	NUM	0.15911E-01	0.10633E+00
Z2SS	-->	NUTL	ANUT	0.16817E-01	0.11238E+00
Z2SS	-->	ANUTL	NUT	0.16817E-01	0.11238E+00
W1SS+	-->	Z1SS	W+	0.10014E-01	0.72632E-01

W1SS+	-->	NUEL	E+	0.31421E-01	0.22790E+00
W1SS+	-->	NUML	MU+	0.31421E-01	0.22790E+00
W1SS+	-->	NUTL	TAU+	0.33629E-01	0.24392E+00
W1SS+	-->	EL+	NUE	0.26262E-02	0.19048E-01
W1SS+	-->	MUL+	NUM	0.26262E-02	0.19048E-01
W1SS+	-->	TAU1+	NUT	0.24781E-01	0.17974E+00
W1SS+	-->	TAU2+	NUT	0.13511E-02	0.97995E-02