Dirac Triplet Extension of the MSSM CARLOS ALVARADO, AN-
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Dame — In this paper we explore extensions of the Minimal Supersymmetric Stan-
dard Model involving two $SU(2)_L$ triplet chiral superfields that share a superpo-
tential Dirac mass yet only one of which couples to the Higgs fields. This choice is
motivated by recent work using two singlet superfields with the same superpotential
requirements. We find that, as in the singlet case, the Higgs mass in the triplet ex-
tension can easily be raised to 125 GeV without introducing large fine-tuning. For
triplets that carry hypercharge, the regions of least fine tuning are characterized by
small contributions to the $\mathcal{T}$ parameter, and light stop squarks, $m_{\tilde{t}_1} \sim 300 - 450$
GeV; the latter is a result of the $\tan \beta$ dependence of the triplet contribution to the
Higgs mass. Despite such light stop masses, these models are viable provided the
stop-electroweakino spectrum is sufficiently compressed.

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