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Decay of Charged Higgs boson in TeV scale supersymmetric seesaw model

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In some class of supersymmetric models, the right-handed neutrino mass is given as a consequence of the supersymmetry (SUSY) breaking and its scale could be as low as TeV scale due to the Giudice-Masiero mechanism. A
phenomenologically interesting feature of this scenario is an enhancement of a scalar trilinear interaction of Higgs-
slepton-(right-handed) sneutrino. We study some phenomenological aspects of this scenario focusing on the scalar
trilinear interaction. We show that the 1-loop correction by sneutrino exchange to the lightest Higgs boson mass
destructively interferes with top-stop contributions in the minimal SUSY Standard Model. We find that a decay of
charged Higgs boson into sneutrino and charged slepton is sizably enhanced and hence it gives rise to a distinctive
signal at future collider experiments in some parameter space.

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