

RECEIVED: March 20, 2018

ACCEPTED: March 21, 2018

PUBLISHED: March 26, 2018

## Erratum: Charge and color breaking constraints in MSSM after the Higgs discovery at LHC

**Debtosh Chowdhury, Rohini M. Godbole, Kirtimaan A. Mohan and Sudhir K. Vempati**

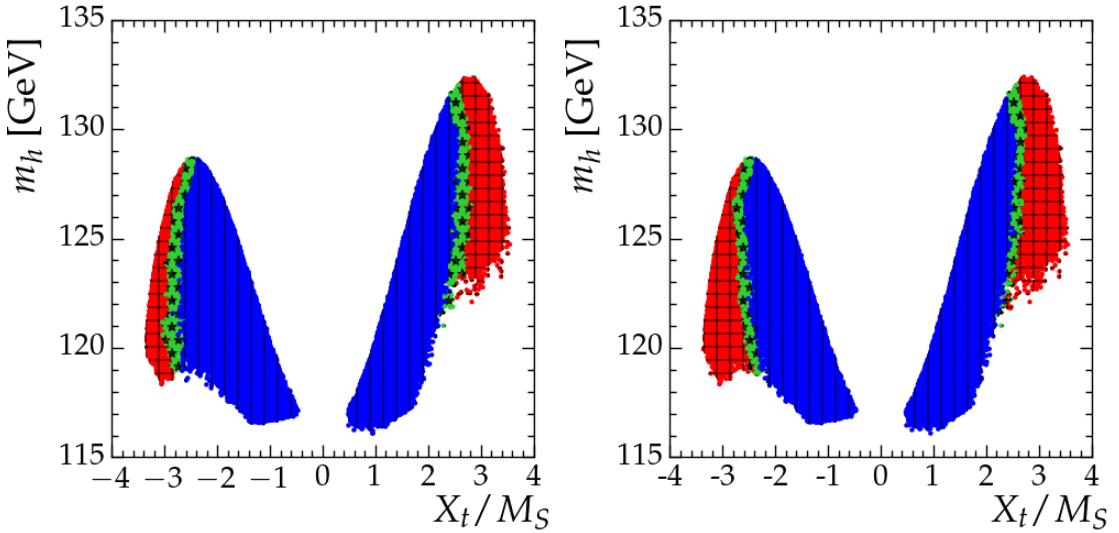
*Centre for High Energy Physics, Indian Institute of Science,  
Bangalore 560 012, India*

*E-mail:* [debtosh@cts.iisc.ernet.in](mailto:debtosh@cts.iisc.ernet.in), [rohini@cts.iisc.ernet.in](mailto:rohini@cts.iisc.ernet.in),  
[kirtimaan@cts.iisc.ernet.in](mailto:kirtimaan@cts.iisc.ernet.in), [vempati@cts.iisc.ernet.in](mailto:vempati@cts.iisc.ernet.in)

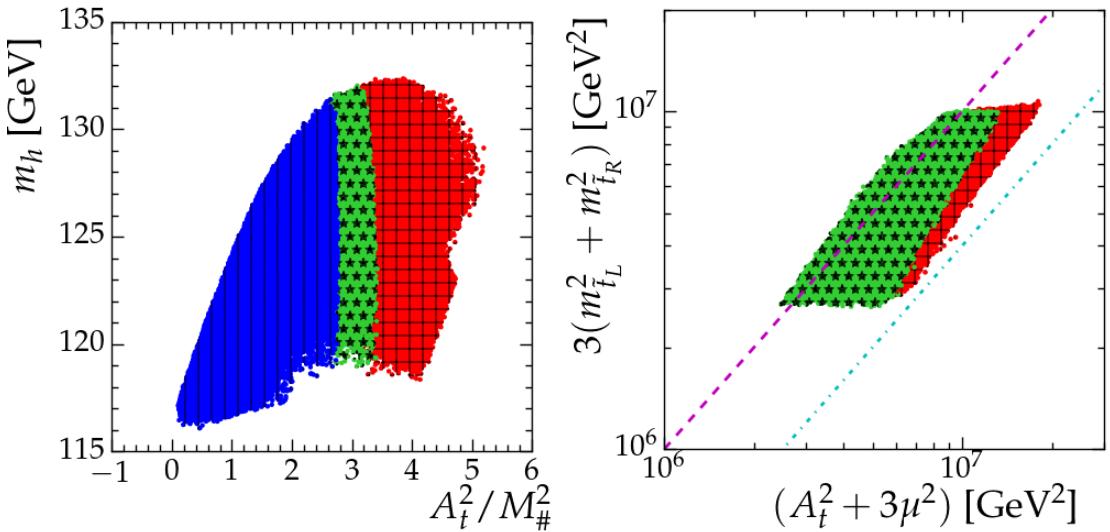
ERRATUM TO: [JHEP02\(2014\)110](#)

ARXIV EPRINT: [1310.1932](#)

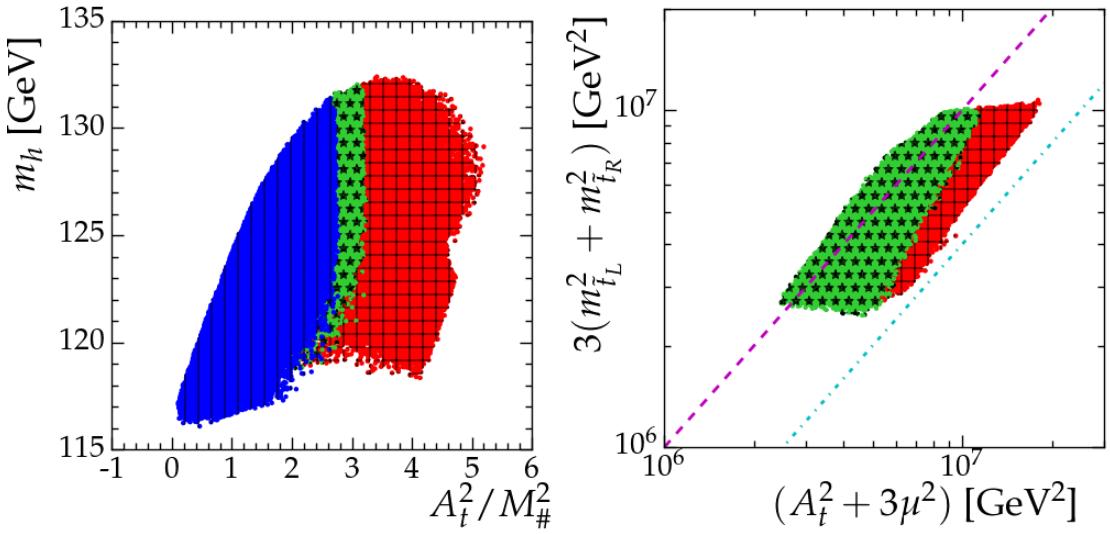
We have detected an error in the Higgs spectrum calculation in the modified version of SuSeFLAV [1]. We have corrected this and furthermore updated the computation by using the recent version of FeynHiggs 2.10.4 [2–6] to calculate the Higgs spectrum. The sole effect of this bug was an overestimation of the light Higgs mass by 3–4 GeV. Thus the main conclusions of JHEP 1402 (2014) 110 remain unchanged. Figures 1–4 are the updated plots corresponding to figures 1–4 of [JHEP 02 \(2014\) 110](#).



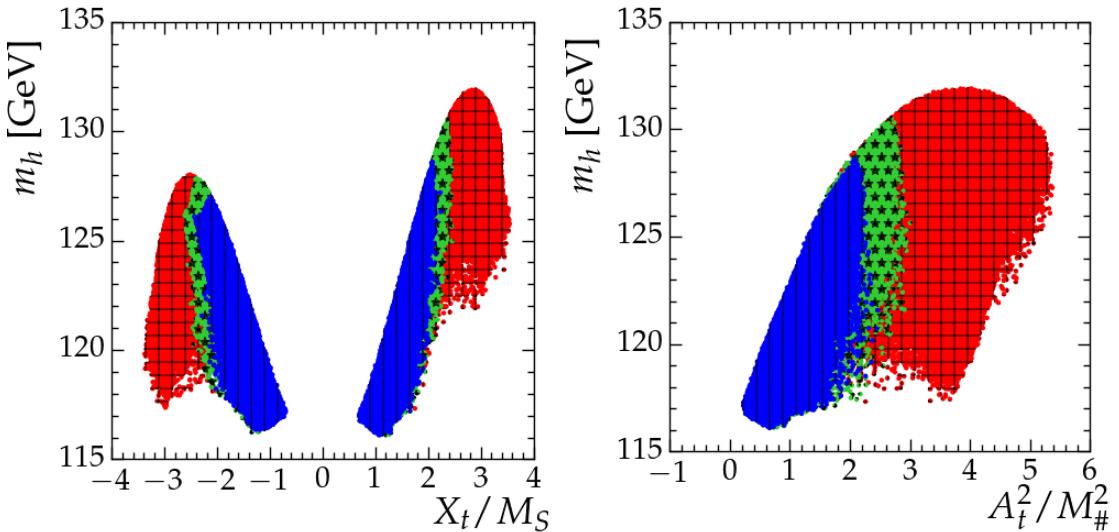
**Figure 1.** Stable (blue, vertical lines), meta-stable (green, stars) and unstable (red, checkered) vacuum in the  $m_h$  vs.  $X_t/M_S$  plane. The left panel represents three field analysis and the right panel four field analysis.



**Figure 2.** Left: the variation of  $m_h$  against  $A_t^2/M_\#^2$  for three field potential. Right: the variation of  $3(m_{\tilde{t}_L}^2 + m_{\tilde{t}_R}^2)$  with  $A_t^2 + 3\mu^2$  for the three field. The dashed (magenta) line corresponds to the analytic bound and the dot-dashed (cyan) line corresponds to the empirical bound. Points that correspond to the EWSB vacuum being unstable are given in red (checkered), meta-stable in green (stars) and stable in blue (vertical lines).



**Figure 3.** Left: the variation of  $m_h$  against  $A_t^2/M_\#^2$  for the four field potential. Right: the variation of  $3(m_{\tilde{t}_L}^2 + m_{\tilde{t}_R}^2)$  with  $A_t^2 + 3\mu^2$  for the four field potential. The dashed (magenta) line corresponds to the analytic bound and the dot-dashed (cyan) line corresponds to the empirical bound. Points that correspond to the EWSB vacuum being unstable are given in red (checkered), meta-stable in green (stars) and stable in blue (vertical lines).



**Figure 4.** Left: the variation of  $m_h$  against  $X_t$  for the four field potential with  $\mu$  set in the range [1000, 1500] GeV. Right: the variation of  $m_h$  against  $A_t^2/M_\#^2$  for the same. Points that correspond to the EWSB vacuum being unstable are given in red (checkered), meta-stable in green (stars) and stable in blue (vertical lines).

**Open Access.** This article is distributed under the terms of the Creative Commons Attribution License ([CC-BY 4.0](#)), which permits any use, distribution and reproduction in any medium, provided the original author(s) and source are credited.

## References

- [1] D. Chowdhury, R. Garani and S.K. Vempati, *SUSEFLAV: Program for supersymmetric mass spectra with seesaw mechanism and rare lepton flavor violating decays*, *Comput. Phys. Commun.* **184** (2013) 899 [[arXiv:1109.3551](#)] [[INSPIRE](#)].
- [2] S. Heinemeyer, W. Hollik and G. Weiglein, *FeynHiggs: A program for the calculation of the masses of the neutral CP even Higgs bosons in the MSSM*, *Comput. Phys. Commun.* **124** (2000) 76 [[hep-ph/9812320](#)] [[INSPIRE](#)].
- [3] S. Heinemeyer, W. Hollik and G. Weiglein, *The masses of the neutral CP-even Higgs bosons in the MSSM: Accurate analysis at the two loop level*, *Eur. Phys. J. C* **9** (1999) 343 [[hep-ph/9812472](#)] [[INSPIRE](#)].
- [4] G. Degrassi, S. Heinemeyer, W. Hollik, P. Slavich and G. Weiglein, *Towards high precision predictions for the MSSM Higgs sector*, *Eur. Phys. J. C* **28** (2003) 133 [[hep-ph/0212020](#)] [[INSPIRE](#)].
- [5] M. Frank, T. Hahn, S. Heinemeyer, W. Hollik, H. Rzehak and G. Weiglein, *The Higgs Boson Masses and Mixings of the Complex MSSM in the Feynman-Diagrammatic Approach*, *JHEP* **02** (2007) 047 [[hep-ph/0611326](#)] [[INSPIRE](#)].
- [6] S. Heinemeyer, W. Hollik, H. Rzehak and G. Weiglein, *The Higgs sector of the complex MSSM at two-loop order: QCD contributions*, *Phys. Lett. B* **652** (2007) 300 [[arXiv:0705.0746](#)] [[INSPIRE](#)].