Corrections for "A Supersymmetry Primer", book version

Please note that the book version is now hopelessly obsolete; you should be reading v4 (June 2006) instead!

The following is a list of known corrections to the non-archive version which appears in the book "Perspectives on Supersymmetry", ed. G.L.Kane, World Scientific, Singapore, (1998). If you have one of the longer archive versions, you can find the corresponding list of corrections at:
`http://zippy.physics.niu.edu/primer.shtml`.
Please send any further corrections or suggestions to `spmartin@niu.edu`.
This list was last updated: June 1, 2006

• Section 1, eq. (1.2): The numerical coefficient of the logarithmic term should not be 6. In fact, it should be 12 for the real component of the complex field H and 4 for the imaginary part of H. This difference is due to the fact that the fermion mass necessarily breaks the electroweak symmetry, so one can't really talk about the logarithmic correction to m_H^2 as if it were universal. The $\Lambda_{\rm UV}^2$ correction *is* the same for the real and imaginary parts of H, however, and is correct as given. (Thanks to Shufang Su.)

• page 26, eq. (3.46): The indices ij should be lowered on W^{*ij}.

• page 39, 6th line from the bottom: There are five, not nine, more scalar quartic interactions proportional to y_t^2 besides the three shown in Figure 7. (Thanks to Bob McElrath and Keith Thomas.)

• page 40, 9th and 10th lines from the bottom: The sentence "The winos and bino only couple to the left-handed squarks and sleptons, and ..." should have the words "and bino" removed. So it should read: "The winos only couple to the left-handed squarks and sleptons, and ...".

• page 43, first paragraph, line 6: Instead of minutes or hours, the proton lifetime would actually be a tiny fraction of a second if all components of λ' and λ'' were of order unity. (Thanks to John Terning.)

• page 51, eqs. (6.4) and (6.5): There are three minus sign errors. These equations should read:

$$V = -\frac{1}{2}D^2 - \kappa D - gD\sum_i q_i \phi^{*i}\phi_i$$
$$D = -\kappa - g\sum_i q_i \phi^{*i}\phi_i$$

• page 61, 6th line: $\langle F_S\rangle$ should be replaced by $\sqrt{\langle F_S\rangle}$. (Thanks to Verónica Sanz.)

• page 70, eq. (7.19): The coefficient of $g_1^2|M_1|^2$ should be $-\frac{6}{5}$, not $-\frac{3}{5}$. (Thanks to Scott Thomas and Gudrun Hiller.)

• page 73, eq. (7.25): The 174 GeV should be squared. So, the equation should read:

$$v_u^2 + v_d^2 = v^2 = 2m_Z^2/(g^2 + g'^2) \approx (174\ {\rm GeV})^2.$$

• page 75, eq. (7.37): The factor of $\sin^4\beta$ should actually be $\sin^2\beta\cos^2\alpha$. However, in the usual decoupling limit of $m_{A^0} \gg m_Z$, then $\cos\alpha \approx \sin\beta$ and eq. (7.37) becomes correct as written. (Thanks to John Terning and Gudrun Hiller.)

• page 80, equation (7.53): "$\mathbf{U}^T$" should be "$\mathbf{U}^*$". So this equation should read:

$$\mathbf{U}^*\mathbf{X}\mathbf{V}^{-1} = \begin{pmatrix} m_{\tilde{C}_1} & 0 \\ 0 & m_{\tilde{C}_2}\end{pmatrix}.$$

• page 80, equation (7.54),(7.55): This should be just one equation, not two equations as the numbering seemed to indicate.

• page 86, 1st line after eq. (7.80)]: The range for the stop mixing angle should be $0 \leq \theta_{\tilde{t}} < \pi$. (Thanks to Graham Kribs.)