Errata

"An Introduction to Gauger-Higgs Unification"

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Chapter 1

p. 3, 11th line from the bottom: "Brown" should be "Brout".

Chapter 7

p. 122, Eq. (7.38), in the second relation

$$\langle\tilde{\Phi}\rangle = \begin{pmatrix} -w^* \\ 0 \\ 0 \\ 0 \end{pmatrix} \quad \text{should be} \quad \langle\tilde{\Phi}\rangle = \begin{pmatrix} 0 \\ 0 \\ -w^* \\ 0 \end{pmatrix}$$

p. 123, in Eq. (7.44) and p. 124 in Eq. (7.45)

$$\int d^5x\sqrt{-\det G} \qquad \text{should be} \qquad \int d^5x\sqrt{-g}$$

p. 139, Eq. (7.103), in the right-hand side of the second equation

$$\frac{2m_{Be}}{\sqrt{k}} \qquad \text{should be} \qquad \frac{m_{Be}}{\sqrt{k}}$$

p. 139, Eq. (7.104), in the right-hand side of the second equation

in the second equation

$$\frac{m_{Be}}{\sqrt{k}} \qquad \text{should be} \qquad \frac{m_{Be}}{2\sqrt{k}}$$

in the third equation

$$\frac{m_{Be}^2}{k^2} \qquad \text{should be} \qquad \frac{m_{Be}^2}{2\,k^2}$$

$$\frac{m_{Be}M_e}{k^{3/2}} \qquad \text{should be} \qquad \frac{m_{Be}M_e}{2\,k^{3/2}}$$

p. 140, Eq. (7.107),

$$\frac{m_{Be}\lambda}{\sqrt{k}} \qquad \text{should be} \qquad \frac{m_{Be}\lambda}{2\sqrt{k}}$$

p. 140, Eq. (7.108), the second row and third column of $K^{\pm}_{\nu_e}$

$$\frac{m_{Be}}{k} \qquad \text{should be} \qquad \frac{m_{Be}}{2\,k}$$

p. 140, Eq. (7.109), in the last term

$$\frac{m^2_{Be}}{k} \qquad \text{should be} \qquad \frac{m^2_{Be}}{2\,k}$$

p. 141, Eq. (7.110) should be

$$m_{\nu_e} \simeq \begin{cases} \dfrac{m_e^2 M_e z_L^{2c_e+1}}{(c_e+\frac{1}{2})m^2_{Be}} & \text{for } c_e > \frac{1}{2}\ , \\ \dfrac{m_e^2 M_e}{(|c_e|-\frac{1}{2})m^2_{Be}} & \text{for } c_e < -\frac{1}{2}\ . \end{cases}$$

p. 142, Table 7.6, the values of m_{B_α} should be

Leptons $\cdots$	$m_{B\alpha}$ (GeV) $\cdots$
(ν_e, e)	6.8×10^5
(ν_μ, μ)	1.8×10^8
(ν_τ, τ)	4.1×10^9

Chapter 8

p. 178, Eq. (8.72), in the first line

$$\mathcal{L}^{Wud} = \frac{g_w}{\sqrt{2}} \sum_{\ell=0}^{\infty} W_\mu^{(\ell)\dagger} \qquad \text{should be} \qquad \mathcal{L}^{Wud} = -i\frac{g_w}{\sqrt{2}} \sum_{\ell=0}^{\infty} W_\mu^{(\ell)\dagger}$$

p. 179, Eq. (8.74), in the first line

$$\mathcal{L}^{W\nu_e e} = \frac{g_w}{\sqrt{2}} \sum_{\ell=0}^{\infty} W_\mu^{(\ell)\dagger} \qquad \text{should be} \qquad \mathcal{L}^{W\nu_e e} = -i\frac{g_w}{\sqrt{2}} \sum_{\ell=0}^{\infty} W_\mu^{(\ell)\dagger}$$

p. 182, Eq. (8.87), the expression for $\hat{g}^{Zdd,su2}_{L/R\,\ell nm}$ should be

$$\hat{g}^{Zdd,su2}_{L/R\,\ell nm} = \cos\theta^0_W T^3_d\, G_W[(h^L, h^R, \hat{h})^{su2}_{Z^{(\ell)}}; (f,g)^{d^{(n)}}_{L/R}, (f,g)^{d^{(m)}}_{L/R}]$$

p. 183, the first line, the sentence

"The Z couplings to $d^{(n)}D^{(m)}$ and $D^{(n)}D^{(m)}$ are very small, $\cdots$"

should be replaced by

"The Z couplings to $d^{(n)}D^{(m)}$ and $D^{(n)}D^{(m)}$ are very small except for diagonal elements $\hat{g}^{ZDD}_{L/R\,\ell nn}$ for which there are contributions from the $U(1)_X$ part, $\cdots$"

Bibliography

p. 260, the reference [99], the title of the paper is

"Gauge Coupling Unification in Simplified Grand Gauge-Higgs Unification".