

New Errata for “Introduction to Elementary Particles, 2nd ed.”

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- Page xi, last line: “Cal Tech” → Caltech”.
- Page xv, second equation under “Dirac Matrices”: $\sigma^i \rightarrow \gamma^i$.
- Page xvi, last line: $10^{-9} \rightarrow 10^9$.
- Page 10. “Further reading,” line 4: change back slashes to forward slashes (http://pg ...).
- Page 21, last paragraph, line 8: “Meantime” → “Meanwhile”.
- Page 26, caption to Figure 1.6, last line: 82 → 47.
- Page 30, last line: “Figure 1.8” → “Figure 1.7”.
- Page 39, in the second and third figures, the two *s*’s on the left should be upper case (but not the *s*’s in the diagrams themselves).
- Page 41, 3rd paragraph (beginning “Indeed”): “in quark model” → “in the quark model”.
- Page 49, first table, top right corner: $L_r \rightarrow L_\tau$.
- Page 51, 3rd line of the table: $\nu_u \rightarrow \nu_\mu$, and $d \rightarrow d$.
- Page 75: the subsection “Quarks” should really be a sub-subsection, with number 2.4.2.2, not 2.4.3.
- Page 76, middle diagram: change “(p)” on the lower left to “(n)”.
- Page 77, lower left diagram: change “(Δ)” on lower left to “(Λ)”.
- Page 77, lower right diagram: change “(Δ)” on lower right to “(Λ)”.
- Page 78, lower right diagram: remove the arrowhead on the lower right *Z* line.
- Page 86, Reference 1: actually, the term “asthenons” for the *W* and the *Z* was proposed by T. Curtright and P. G. O. Freund in “Supergravity,” Proc. Supergravity Workshop at Stony Brook (Sept. 1979), eds. P. van Nieuwenhuizen and D. Z. Freedman (North-Holland, Amsterdam, 1979), p. 197.
- Page 112, Answer to Problem 3.19(b): move *c*, to numerator.
- Page 125, Eq. 4.17: the sum is over m_1 and m_2 , not j_1 and j_2 ($\sum_{m_1, m_2} \dots$).

- Page 134, penultimate line: “Figure 1.13” \rightarrow “Figure 1.12”.
- Page 150, line after Eq. 4.76: This is not entirely correct. Direct observation of T violation was claimed by A. Angelopoulos, et al., *Physics Lett. B* **444**, 43 (1998), but that implication has been challenged. See *Physics Today*, November 2012, page 16. At any rate, T violation has now been seen unambiguously: J. P. Lees, et al., *Phys. Rev. Lett.* **109**, 211801 (2012).
- Page 152, Reference 18: remove “, (or Problem 5.3 below)”.
- Page 179: line 2, $\pi^0 \rightarrow \eta$; second column of footnote, 5.79 \rightarrow 5.37.
- Page 191, line after Equation 5.69: 5.46 \rightarrow 5.48.
- Page 195, Problem 5.16, line 1: 5.60 \rightarrow 5.62.
- Page 206, Eq. 6.23: remove the x after $d^3\mathbf{p}_2$.
- Page 222: Reference 5, penultimate line, “Chapter 11” \rightarrow “Chapter 10”; Reference 7, last line, “*Physical*” \rightarrow “*Physics*”.
- Page 227, last equation of text: lower the index λ on the final p .
- Page 228, line after Eq. 7.15: 3.13 \rightarrow 3.14.
- Page 236, Eq. 7.58: remove space after each minus sign.
- Page 249: line 4, “Figure 7.5” \rightarrow “Figure 7.6”.
- Page 259, line above Eq. 7.159: “footnote to Equation 7.94” \rightarrow “footnote after Equation 7.93”.
- Page 285, last line of first footnote: 8.10 \rightarrow 8.11.
- Page 296, second line after Eq. 8.77: 7.146 \rightarrow 7.149.
- Page 306, Problem 8.24: 8.86 \rightarrow 8.92; Problem 8.25: 9.69 \rightarrow 8.93 (twice); Problem 8.26: 9.71 \rightarrow 8.95.
- Page 310, second line after Eq. 9.10: 4.6 \rightarrow 4.4.
- Page 317, Equation 9.52, second term of numerator: insert c after m_n .
- Page 323: line before Equation 9.74, 9.35 \rightarrow 6.35; line after Equation 9.74, 9.34 \rightarrow 6.34.
- Page 330, second equation in footnote: the second plus sign should be minus.
- Page 332, figure: change “ μ ” to “ e ” below the upper right line.
- Page 333, line before Eq. 9.99: 9.47 \rightarrow 6.47.

- Page 335, 5 lines after Eq. 9.102: Equation 9.96 \rightarrow Equation 7.96.
- Page 336, line before Eq. 9.108: 9.47 \rightarrow 6.47.
- Page 337, Eq. 9.115: $\left(\frac{M_Z c^2}{\hbar \Gamma_Z}\right) \rightarrow \left(\frac{M_Z c^2}{\hbar \Gamma_Z}\right)^2$.
- Page 337, line 1 of second column of footnote: [11] \rightarrow [12].
- Page 341, Eqs. 9.125 and 9.129: $j_\mu^- \rightarrow j_\mu^+$.
- Page 342: Equation to left of first figure, $j_\mu^- \rightarrow j_\mu^+$; equation to left of second figure, $j_\mu^+ \rightarrow j_\mu^-$.
- Page 343, two lines after Equation 9.137: 4.5 \rightarrow 4.3.
- Page 348, Problem 9.1: line 1, 9.27 \rightarrow 7.25; line 3: $\epsilon_\mu \epsilon^\mu \rightarrow \epsilon_\mu \epsilon^{\mu*}$.
- Page 379, line after Eq. 10.132: “Equation 10.121” \rightarrow “Equation 10.21”.
- Page 389, line 8: “athousand” \rightarrow “a thousand”.
- Page 395, second footnote: “Section 11.9” \rightarrow “Section 1.11”.
- Page 398: Reference 5, line 1: insert space after “see”; Reference 6: “*This Quote is From his Lecture,*” \rightarrow “This quote is from his lecture”.
- Page 402, line after the first figure: $-im_f c^2/v \rightarrow -im_f c^2/v\sqrt{\hbar c}$.
- Page 403, top line: $2iM_m^2 c^2 g^{\mu\nu}/(\hbar^2 v) \rightarrow iM_m^2 c^3 g^{\mu\nu}/v\sqrt{\hbar c}$.
- Page 403, line after first diagram: $-3im_h^2 c^2/(\hbar^2 v) \rightarrow -im_h^2 c^3/2v\sqrt{\hbar c}$.
- Page 407, third footnote, second line: “ $U(n)$ has n ” \rightarrow “ $U(n)$ has n^2 ”.
- Page 408, second paragraph, line 8: “such those” \rightarrow “such as those”.
- Page 412, line 3 of item 1: 8.94 \rightarrow 8.93.
- Page 416, line 4 of section on Dark Energy: 12.10 \rightarrow 12.11.
- Page 431, Eq. B.10: insert | to left of \mathbf{p}_3 , in denominator.
- Page 434, Eq. C.8: θ and σ should be bold face (in the exponent), and $\hat{\theta}$ should be bold.
- Page 438, third diagram: change all three p 's to q 's.
- Page 439, top diagram: interchange subscripts $i \leftrightarrow j$.
- Page 448, “Mandelstam vairables” \rightarrow “Mandelstam variables”.