Corrections to the 18th Printing
(August 20, 2009)
Introduction to Electrodynamics, 3rd ed.
by David Griffiths

Note: this includes the corrections to the 11th and 12th printings, which were never made.

- Page 29, Figure 1.25, at the bottom of the right-hand vertical dashed line: change "x" to "b".
- Page 31, line after Eq. 1.56: insert comma after "I suppose".
- Page 59, line after Eq. 2.1: change "**permitivity**" to "**permittivity**".
- Page 75, Problem 2.15, at the end, add: ", for the case $b = 2a$."
- Page 87, Figure 2.35, inside the inner triangle: E should be bold face.
- Page 88, line above Eq. 2.32: make the two E's bold face, as in the equation.
- Page 92, Eq. 2.40: remove $j = 1$ and move $j > i$ up to fill the space.
- Page 109, Problem 2.51: italicize "attract" (after "masses").
- Page 129, line 3: change "$g(x)$" to "$g(y)$".
- Page 132, Equation 3.39: the first prime should be on the subscript n, not on f ($f_{n'}$).
- Page 156, Problem 3.38: in the equation, q should be Q.
- Page 158, Problem 3.45(a), line 3: change "where" to "(in the notation of Eq. 1.31), where" and remove the comma after the preceding equation.
- Page 159, Problem 3.47: in the second answer there should be a minus sign in front of $\frac{2V_0}{b}$.
- Page 159, Problem 3.48(b): the answer should be $-(\epsilon_0 V_0/\pi)\ln 2$.
- Page 159, footnote 13: "107" should be light face (but "**67**" stays bold).
- Page 197, Figure 4.32: the arrows on h are backwards (arrowhead on upper one should be at the top, pointing up, and on the lower one at the bottom, pointing down).
- Page 205, 2 lines above Eq. 5.3: put parentheses around QvB.
- Page 210, Figure 5.11: tilt the arrow labeled **v** up a bit, to make it perpendicular to the arrow labeled $\mathbf{F}_{\text{mag}}$, and extend the vertical arrow labeled **u** accordingly.

- Page 211, second paragraph, line 1: change "pushing" to "sliding".
- Page 222, line after Eq. 5.43: "over the surface" → "over a surface".
- Page 238, Eq. 5.70: "$s < R \rightarrow s \leq R$"; Eq. 5.71: "$s > R \rightarrow s \geq R$".
- Page 276, line above Fig. 6.23: "within" → "within it".
- Page 286, Table 7.1: remove "Diamond . . . 2.7" (and move "Silicon . . . 2.4 $\times 10^3$" up a line).
- Page 307, Figure 7.25: the arrow from the center pointing toward the lower right should carry the label a (matching b to the left).
- Page 311, one line after second equation: change "5.63" to "5.64".
- Page 331, two lines above Eq. 7.59: "change" → "charge".
- Page 332, line after (7.60): move "(Fig. 7.47)" to six lines up from the bottom of the page, after "loop".
- Page 337, Problem 7.50, line 5: insert a minus sign in front of the integral.
- Page 354, last equation: change $\frac{Q}{2\pi\epsilon_0}$ to $\frac{Q}{4\pi\epsilon_0}$.
- Page 357, first full paragraph, starting line 4: change "In this case . . . Chapter 12 (Ex. 12.12)" to "In this case, however, the center of mass is *not* at rest: the battery is losing energy, and the resistor is gaining energy, so relativistically there is a net transfer of mass ($m = E/c^2$) in the z direction, and this corresponds precisely to the momentum in the fields.".
- Page 357, 3 lines above Problem 8.5: remove "(The cable will not . . . hidden momentum.)".
- Page 358, footnote 3: add "The momentum in the fields is canceled by "hidden" (mechanical) momentum in the source of the magnetic field—see D. Babson, et al., *Am. J. Phys.* **77**, 826 (2009).".
- Page 358, Problem 8.6 (c): change "Show that the total impulse is (again) equal to the momentum originally stored in the fields." to "What is the total impulse delivered to the system?".
- Page 360, sentence before Eq. 8.35: change to read: "The z component of the *angular* momentum density was

$$(\mathbf{r} \times \boldsymbol{\wp}_{\text{em}})_z = -\frac{\mu_0 nIQ}{2\pi l},$$

  which is *constant*, as it turns out. The radial component integrates to zero, by symmetry; to get the *total* . . . ."
- Page 361, line 1: change "(Ex. 8.3)" to"(Prob. 8.6)".

- Page 363, Problem 8.13 (a): add at the end "[Define $\boldsymbol{\omega} = \omega\hat{\mathbf{z}}$, so ω_a and ω_b could be positive or negative.]"
- Page 363, Problem 8.13 (b), *Answer*: put a minus sign in front of the expression, and $\hat{\mathbf{z}}$ at the end.
- Page 363, Problem 8.14, line 3: change "momentum in the" to "momentum (about the center) in the".
- Page 371, Figure 9.5(b): the transmitted pulse (on the right) should be the other way up.
- Page 382, Problem 9.12: insert a minus sign in front of $\mathbf{T}$.
- Page 402, Equation 9.166: E_0 should be bold face (as in 9.163).
- Page 418, Figure 10.1(a): the expression is missing a c; it should read $-\frac{\mu_0 kct}{2}$.
- Page 427, Problem 10.10: change the equation from "$I(t) = kt$." to "$I(t) = kt \qquad (-\infty < t < \infty)$.".
- Page 430, line 1: change "in the direction of" to "toward the point".
- Page 442, Problem 10.24(b): change "by q_2 to q_1" to "to q_2 by q_1".
- Page 444, footnote 3: change "but there is a subtle problem ... save for Sect. 11.2" to "but moving point charges are hard to work with (because of the awkward denominator in the Liénard-Wiechert potentials), and this formulation is much simpler".
- Page 473: move Figure 11.19 up above Problem 11.22.
- Page 489, Figure 12.11: the long arrow heading left (and slightly upward) should terminate at the right-hand vertical dashed line (the second of them, counting from the left).
- Page 495, Figure 12.17: remove the bar over A, and move the bullet from the $\bar{x}$ axis to the x axis.
- Page 498, Problem 12.14 (b): change "observer on the *dock* say the beam makes with the deck? Compare Prob. 12.10, and explain the difference." to "an individual photon trajectory make with the deck, according to an observer on the dock? What angle does the *beam* (illuminated, say, by a light fog) make? Compare Prob. 12.10."
- Page 511, Problem 12.28(a): change "Prob. 12.2" to "Prob. 12.2(a)".
- Page 537, footnote 16: the first $\mathbf{u}_-$ should be $\mathbf{u}_+$.

- Pages 538-539, the word "while" and Eq. 12.124 are repeated in some printings—once at the bottom of page 538, and again at the top of page 539.
- Page 542, line after Eq. 12.134: change "Chapter 11" to "Chapter 10".
- Page 543, Problem 12.55, line 4: $\partial^\mu \equiv \partial x_\mu$ should read $\partial^\mu \equiv \partial/\partial x_\mu$.
- Page 568, "Hidden momentum": change 357 to 358.