Corrections to

Electromagnetic Waves

by David H. Staelin, Ann W. Morgenthaler, Jin Au Kong

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Spelling or word changes are indicated by the page and line number, followed by the correct spelling of the word or words. If the change is ambiguous the phrase in which it is embedded will also be presented (preceded and followed by ...).

Page #	**Line**	**Correction**
ix	2	practical
x	5	ranging
	6	differential
	9	appropriate
	10	phenomena...equivalent
	11	...models, and...
3	22	...$\left(\overline{E} + \overline{v} \times m_o \overline{H}\right)$. The permeability of free space, m_o, is introduced on page 4.
	27	$\overline{F} = r\overline{E} + \overline{J} \times m_o \overline{H}$
20		*Figure 1.5. The ellipses in this figure exhibit excessive artistic license - their eccentricities and tilt angles are not precisely drawn.*
25	9	...average of the product of two...
	26	(1.4.4) - (1.4.7)
42	13	$\underline{\overline{E}}_l = ...$
	14	$\underline{\overline{E}}_r = ...$
	34	*Omit "^" in exponent.*
47		*Insert after (2.1.6):* This becomes Laplace's equation when $r = 0$.
62	1	...of a lossless matched radiating...
73	5	$\overline{\overline{H}} = \hat{r} \times \overline{E} / h_o$
75	23	30m
	24	60m
	30	...heard by a receiver with 10^{-4} vm^{-1} sensitivity
95	15	...flows in the slab between $x = 0$ and $x = L$?
111	11	...and $\mu\overline{H}$ cannot...
113	22	$\overline{\overline{E}} = \hat{y}\, e^{-jz - z/100}$
116	8	...$= 10^5 \mu_o$ at $\omega = 0$.

Page #	Line #	Correction
117	last	Figure 4.1.
118	15	...in Figure 4.1, along...
121	5	4.2(b).
126	last	$= \hat{z}\left(\lvert E_i\rvert^2 / 2\right)\mathrm{Re}\left\{..e^{-2jk_i z} / h^*_i\right\}$
127	1	if h_i is real, then because...
	7	...$\lvert E_i\rvert^2 / 2h_i$ for real h_i.[1]
	7	*After line 7 insert (move) lines 15 and 16 (If...interface.)*
	12	equations (4.2.11) and...
	13	...hence for h_i real
135		*Fig. 4.7(b) is misleading; waves decay faster; i.e.* $\delta = \lambda/2\pi$.
137	25	...$\nabla \times \overline{H}$. For the case $H_x = 0$, we therefore...
	28	$= -\left(\frac{1}{2}\right) m_o$ Re ...
138	11	*Example 4.2.5 should probably be moved and renumbered as 4.1.2.*
139	1	*Example 4.2.6 should probably be moved and renumbered 4.1.3.*
141	3	$f = \left.\frac{¶w}{¶d_1}\right\rvert_L = \frac{¶}{¶d_1} \ldots \frac{¶L}{¶d_1} \ldots.$
	7	$t = \left.\frac{¶w}{¶q}\right\rvert_L = \ldots \frac{¶L}{¶q} \ldots$
164		*Figure 4.18. Replace* J_{os} *with* J_{sA}.
176	12	...(V/m) at a depth...
	13	...antenna, if $\lvert\overline{E}\rvert$ above the surface is 1 V/m?
	14	...100-Hz messages?
211		*Figure 5.12, there should be an arrow associating the topmost horizontal dashed line with the expression* $w_o = 2/\sqrt{L_o C_o}$.
213	9	...less than a...
	29	... $j\omega L_o + 1/j\omega C_o$
217	28	...surface charge density...
218	19	...breakdown field strength 50,000...
219		*Problem 5.5.2 might better be moved to become 6.5.11.*
Page #	**Line #**	**Correction**
220	8	...frequency-domain analyses are presented,...

[1] For complex h_i, $\lvert\Gamma\rvert^2$ can exceed unity without power amplification because the medium is reactive.

224	14	...recover quasistatic behavior.
233	16	...for Section III is found...
234	1	Section I simply...
264		*Figure 6.25, topmost subfigure:* $\Gamma_L = +\frac{1}{2}$.
270		*Figure 6.27:* $V_{Th} = 2V_-(t, z = 0)$
275	13	The input voltage $v_s(t)$
280		*Problem 6.3.3 (d):* ...of part (a) alone; i.e. if Z_L then is set to Z_o and C is unchanged?
283	7	...triggers a 50Ω flip-flop...
285	4	...zero-mean 100-MHz square wave...
297	4	... $)e^{-jk_z z}$
300	1	...angles of bounce less than...
318	23	$\bar{J}_s\sigma$ should be $\bar{J}/_s\sigma$
332		*Problem 7.2.5(a):* ... $)e^{-jk_z z}$ for 0...
340	22	$E_z = ...$
348	Fig. 8.5	axis labels should be mc/2a, nc/2b, pc/2d
358		*Equation (8.4.5):* $...\frac{1}{LC} - \left(\frac{R}{2L}\right)^2$
364, 5	(8.4.22-3)	Third eqn: Q_I should be Q_L
367	6	...Figure 8.12 is...
403	21	...on the 2×3 cm...
407	6	...of antenna arrays...
426	25	...Figure 9.10(a).
	27	...Figure 9.10(b).
	28	...Figure 9.10(c).
	31	...Figure 9.10(d).
433		*Reverse* $\hat{x}$ *and* $\hat{y}$ *in Fig. 9.17(b).*
435	Fig.9.17(b)	Interchange $\hat{x}, \hat{y}$ axis labels
	16-17	Interchange $\hat{x}$ and $\hat{y}$
	23	Figure. 9.17(b) should be Figure 9.17(c)8
447	(9.5.10)	Denominator is $8.20\left(kd_2^{eff}\right)^2$
448	(9.5.11)	Should have $A_{eff}(\theta, \phi)\bar{S}_1(\bar{r})$ (no squaring)
449	(9.5.17)	Right parenthesis missing

Page #	Line #	Correction
461		*Figure 9.31(c) should have a longer arm on the right-hand side and I(z) should be redrawn accordingly.*
	11	...$d = 2l$. For the most common case where $d = l/2$, the factor in brackets in (9.7.3) reduces to $\cos\left(\frac{\frac{p}{2}\cos q}{\sin q}\right)$
470	14	$E_o = -\eta_o J_s / 2$
474	8	$\hat{x}$ -polarized uniform...
486		*Problem 9.4.2:* ...above a flat...separated by 1 m along a line perpendicular to the two dipoles and passing through their centers, and are...parallel to it. (*Delete the rest of the sentence.)*
486		*Problem 9.4.2:* ...positioned above a flat metal...straight line could bisect both dipoles perpendicular to them. (*End of problem.)*
488	33	*Problem 9.5.3 (a):* ...at distance *r* if 30W...
494	18	...constant pressure to... constant volume in the gas (i.e. $\gamma = C_p/C_v$).
489		*Problem 9.8.3:* ...× 1 m in the *x* and *y* directions. ...for $\lvert a_{x,y} \rvert \ll 1$, where a_x and a_y...
499	8	...plane wave. Such a wave is deafening.
523		*Label equation (10.8.8).*
529		*Problem 10.2.1:* ...is radiating 1 mW of acoustic power...
530		*Problem 10.3.2:* ...traveling at zero velocity relative to a wind...
		Problem 10.5.3: ...from the 4-cm diameter open end...
536	10	$...+j\left(\left(A_i B_r - A_r B_i\right)/\left(B_r^2 + B_i^2\right)\right)$.
551		*Insert:* conductivity values, 547

Corrections to Section 4.2R

1	27	*unit normal vector symbol is* $\hat{n}$
2	6-8	$\hat{n}$ *not* $\bar{n}$