2020–06–30

Errata: G. Kristensson, Scattering of Electromagnetic Waves by Obstacles, SCITECH, 2016

Page	Line	Read	Should read
47	10	$\chi = 0$ $\chi = 0$	$\chi = 0$ $\chi \neq 0$
67	2^-	dispite	despite
74	4–5	to solve the Maxwell equations in the homogeneous isotropic material, see Problem 1.16.	to solve the Maxwell equations in the homogeneous isotropic material asymptotically in the limit as $r \to \infty$, see Problem 1.16.
98	6–7	Show that the fields in (1.73) solve the Maxwell equations in a homogeneous isotropic material at all points $r > 0$.	Show that the fields in (1.73) solve the Maxwell equations in a homogeneous isotropic material in the limit as $r \to \infty$.
102	8	chance	change
136	1^-	$C_+ = \{(\boldsymbol{r}, t) : t \geq 0, \lvert\boldsymbol{r} - \boldsymbol{r}_0\rvert = ct\}$	$C_+ = \{(\boldsymbol{r}, t) : t \geq 0, \lvert\boldsymbol{r} - \boldsymbol{r}_1\rvert = ct\}$
137	Figure 2.8	$B(r1, ct)$	$B(\boldsymbol{r}_1, ct)$
137	Figure 2.8	$(r_1, 0)$	$(\boldsymbol{r}_1, 0)$
137	1	C_0+	C_+
173	2^-	Section 3.7	Section 3.6
183	6, 10		Change the order of temporal and spatial integration
202	(4.22)	$\lvert\boldsymbol{E}_0\rvert^2$	$\lvert\boldsymbol{E}_0\rvert^4$
208	5^-	perpendicular	parallel
230	16^-	$\hat{\boldsymbol{p}}_\mathrm{i} = \boldsymbol{E}_0 / \lvert\boldsymbol{E}_0\rvert$	$\hat{\boldsymbol{p}}_\mathrm{e} = \boldsymbol{E}_0 / \lvert\boldsymbol{E}_0\rvert$
266	Figure 6.1	GTD, FO, GO	GTD, PO, GO
272	1^-	$\boldsymbol{E_0}$	$\boldsymbol{E}_0$

275		$\hat{\nu} \cdot \boldsymbol{\epsilon}_1(\boldsymbol{r}, 0) \cdot \nabla\phi(\boldsymbol{r})\|_- = \epsilon\, \hat{\nu} \cdot \nabla\phi(\boldsymbol{r})\|_+$	$\hat{\boldsymbol{\nu}} \cdot \boldsymbol{\epsilon}_1(\boldsymbol{r}, 0) \cdot \nabla\phi(\boldsymbol{r})\|_- = \epsilon\, \hat{\boldsymbol{\nu}} \cdot \nabla\phi(\boldsymbol{r})\|_+$
289	12	the analysis in not	the analysis is not
344	9^-	the electric field polarized parallel to the side a	the electric field polarized is parallel to the side a
345	11	$\theta \neq 0, \pi$ or $\phi = \pi/2$	$\theta \neq 0, \pi$ or $\phi \neq \pi/2$
345	6^-	$\theta \neq 0, \pi$ or $\phi = \pi/2$	$\theta \neq 0, \pi$ or $\phi \neq \pi/2$
350	15	[4,195]	[4,196]
351	4^-	(23)	(24)
372	11	$\nabla \times \boldsymbol{v}_{\tau n}(k\boldsymbol{r}') = k\boldsymbol{v}_{\overline{\tau} n}(k\boldsymbol{r}')$	$\nabla \times \boldsymbol{v}_{\tau n}(k\boldsymbol{r}) = k\boldsymbol{v}_{\overline{\tau} n}(k\boldsymbol{r})$
377	1	(4.18)	(4.19)
404	1^-	$\tau_l(x)$	$\tau_l(\cos\theta)$
461	Figure 8.28	The curve should be constant 1 for $s/a > 1$	
463	Figure 8.29	The curve should be constant 1 for $s/a > 1$	
471	2	$\chi = \kappa = 0.1$	$\chi/\sqrt{\epsilon\mu} = \kappa/\sqrt{\epsilon\mu} = 0.1$
471	9	$\chi = \kappa = 0.1$	$\chi/\sqrt{\epsilon\mu} = \kappa/\sqrt{\epsilon\mu} = 0.1$
473	7	$t_{121} = \dfrac{2k^3a^3\,(\mathrm{i}\chi - \kappa)}{(\epsilon_1 + 2\epsilon)(\mu_1 + 2\mu) - \chi^2 - \kappa^2}$	$t_{121} = \dfrac{2k^3a^3\epsilon\eta\,(\mathrm{i}\chi - \kappa)}{(\epsilon_1 + 2\epsilon)(\mu_1 + 2\mu) - \chi^2 - \kappa^2}$
473	8	$t_{211} = \dfrac{2k^3a^3\,(\mathrm{i}\chi + \kappa)}{(\epsilon_1 + 2\epsilon)(\mu_1 + 2\mu) - \chi^2 - \kappa^2}$	$t_{211} = \dfrac{2k^3a^3\epsilon\eta\,(\mathrm{i}\chi + \kappa)}{(\epsilon_1 + 2\epsilon)(\mu_1 + 2\mu) - \chi^2 - \kappa^2}$
473	10	$6\mathrm{i}\mathbf{J}\chi$	$6\mathrm{i}\mathbf{J}\epsilon\eta\chi$
474	6	$6\Pi\chi$	$6\Pi\epsilon\eta\chi$
474	12, 15	$\mathbf{J}$	$\epsilon\eta\mathbf{J}$
474	1^-	Π	$\epsilon\eta\Pi$
475	3, 7	Π	$\epsilon\eta\Pi$

477	5	$t_{121} = \dfrac{2k^3a^3\,(\mathrm{i}\chi-\kappa)}{(\epsilon_1+2\epsilon)(\mu_1+2\mu)-\chi^2-\kappa^2}$	$t_{121} = \dfrac{2k^3a^3\epsilon\eta\,(\mathrm{i}\chi-\kappa)}{(\epsilon_1+2\epsilon)(\mu_1+2\mu)-\chi^2-\kappa^2}$
477	6	$t_{211} = \dfrac{2k^3a^3\,(\mathrm{i}\chi+\kappa)}{(\epsilon_1+2\epsilon)(\mu_1+2\mu)-\chi^2-\kappa^2}$	$t_{211} = \dfrac{2k^3a^3\epsilon\eta\,(\mathrm{i}\chi+\kappa)}{(\epsilon_1+2\epsilon)(\mu_1+2\mu)-\chi^2-\kappa^2}$
483	1^-	$f_n = -\sum_{n'} T_{nn'}a_{n'}$	$f_n = \sum_{n'} T_{nn'}a_{n'}$
486	5	$\dfrac{1}{r^2(\theta)} = r_0 + r_1P_1(\cos\theta) + r_2P_2(\cos\theta)$	$\dfrac{1}{r^2(\theta)} = r_0 + r_2P_2(\cos\theta)$
486	6	$i = 0, 1, 2$	$i = 0, 2$
486	1^-	$\dfrac{1}{r^2(\hat{\boldsymbol{r}})} = \sum_{l=0}^{2}\sum_{m=0}^{l}\sum_{\sigma=\mathrm{e,o}} r_{\sigma ml}Y_{\sigma ml}(\hat{\boldsymbol{r}})$	$\dfrac{1}{r^2(\hat{\boldsymbol{r}})} = +r_0Y_{\mathrm{e}00}(\hat{\boldsymbol{r}}) + r_1Y_{\mathrm{e}02}(\hat{\boldsymbol{r}}) + r_2Y_{\mathrm{e}22}(\hat{\boldsymbol{r}})$
487	1^-	where $\hat{\boldsymbol{p}}_{\mathrm{e}\parallel} = \hat{\boldsymbol{e}}_{\mathrm{i}\parallel}\cdot\boldsymbol{E}_0/\left\|\boldsymbol{E}_0\right\|$ and $\hat{\boldsymbol{p}}_{\mathrm{e}\perp} = \hat{\boldsymbol{e}}_{\mathrm{i}\perp}\cdot\boldsymbol{E}_0/\left\|\boldsymbol{E}_0\right\|$.	where $\hat{\boldsymbol{p}}_{\mathrm{e}\parallel} = \hat{\boldsymbol{\theta}}$ and $\hat{\boldsymbol{p}}_{\mathrm{e}\perp} = \hat{\boldsymbol{\phi}}$.
492	5	homogenous	homogeneous
496	8^-	Reference [264, Chapter 6]	Reference 264
496	6^-	Reference [141] and references given theirin	Reference 141 and references given therein
505	13	not that $\mathcal{R}_{n'n}(k\boldsymbol{r}_p)$ is real valued	note that $\mathcal{R}_{n'n}(k\boldsymbol{r}_p)$ is real-valued
507	5^-	[134]	[135]
509	9	$\pi_l^m(t)$	$\Pi_l^m(t)$
517	6	$\dfrac{1}{r^2(\theta)} = r_0 + r_1P_1(\cos\theta) + r_2P_2(\cos\theta)$	$\dfrac{1}{r^2(\theta)} = r_0 + r_2P_2(\cos\theta)$
528	7^-	The relation	The relations
608	10	$y_n(z) = -\dfrac{1}{z^{n+1}}\sum_{k=0}^{\infty}\dfrac{(2n-2k-1)!!}{k!}\left(\dfrac{z^2}{2}\right)^k$	$y_n(z) = -\dfrac{1}{z^{n+1}}\sum_{k=0}^{n}\dfrac{(2n-2k-1)!!}{k!}\left(\dfrac{z^2}{2}\right)^k$

			$+\frac{(-1)^{n+1}}{z^{n+1}}\sum_{k=n+1}^{\infty}\frac{1}{k!(2k-2n-1)!!}\left(-\frac{z^2}{2}\right)^k$
628	10	$Y_{\sigma ml} = \frac{C_{lm}}{2C'_{lm}}\left\{\begin{matrix} Y_{lm}+Y_{l-m} \\ -\mathrm{i}Y_{lm}+\mathrm{i}Y_{l-m}\end{matrix}\right\}$	$Y_{\sigma ml} = \frac{C_{lm}}{2C'_{lm}}\left\{\begin{matrix} Y_{lm}+Y^*_{lm} \\ -\mathrm{i}Y_{lm}+\mathrm{i}Y^*_{lm}\end{matrix}\right\}$
675	Five times	$C_{ml,m'l'}(d,\eta)$ or $C_{ml,-m'l'}(d,\eta)$	$C_{ml,m'l'}(kd,\eta)$ or $C_{ml,-m'l'}(kd,\eta)$
675–6	Five times	$D_{ml,m'l'}(d,\eta)$ or $D_{ml,-m'l'}(d,\eta)$	$D_{ml,m'l'}(kd,\eta)$ or $D_{ml,-m'l'}(kd,\eta)$
677	4^-	$=\begin{pmatrix} j_1 & j_2 & j_3-1 \\ 0 & 0 & 0\end{pmatrix}$	$=-\begin{pmatrix} j_1 & j_2 & j_3-1 \\ 0 & 0 & 0\end{pmatrix}$
720	3^-	$\boldsymbol{K}(\hat{\boldsymbol{r}}) = \hat{\boldsymbol{\phi}}\frac{\mathrm{i}ka^2\eta_0}{2a}J_1(ka\sin\theta)$	$\boldsymbol{K}(\hat{\boldsymbol{r}}) = \hat{\boldsymbol{\phi}}\frac{Ika\eta_0}{2}J_1(ka\sin\theta)$