2025–01–28

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

Page	Line	Read		Should read	
xix	10	stuck		struck	
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^-	$C_+ = \{(\boldsymbol{r}, t) : t \geq 0, \|\boldsymbol{r} - \boldsymbol{r}_0\| = ct\}$		$C_+ = \{(\boldsymbol{r}, t) : t \geq 0, \|\boldsymbol{r} - \boldsymbol{r}_1\| = ct\}$	
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)	$\|\boldsymbol{E}_0\|^2$		$\|\boldsymbol{E}_0\|^4$	
208	5^-	perpendicular		parallel	
230	16^-	$\hat{\boldsymbol{p}}_{\mathrm{i}} = \boldsymbol{E}_0 / \|\boldsymbol{E}_0\|$		$\hat{\boldsymbol{p}}_{\mathrm{e}} = \boldsymbol{E}_0 / \|\boldsymbol{E}_0\|$	
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	8^-	$\psi \times$	$\nabla\psi \times$
351	7^-	The first term disappears	The first and last terms disappear
351	4^-	(23)	(24)
372	11	$\nabla \times \boldsymbol{v}_{\tau n}(k\boldsymbol{r}') = k\boldsymbol{v}_{\mp n}(k\boldsymbol{r}')$	$\nabla \times \boldsymbol{v}_{\tau n}(k\boldsymbol{r}) = k\boldsymbol{v}_{\mp n}(k\boldsymbol{r})$
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	$\epsilon\eta\Pi$
475	7	$(\epsilon_1 + 2)$ (numerator and denominator)	$(\epsilon_1 + 2\epsilon)$
475	7	$(\mu_1 + 2)$	$(\mu_1 + 2\mu)$
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 $\hat{\boldsymbol{p}}_{\mathrm{e}\parallel} = \hat{\boldsymbol{e}}_{\mathrm{i}\parallel}\cdot\boldsymbol{E}_0/\lvert\boldsymbol{E}_0\rvert$ and $\hat{\boldsymbol{p}}_{\mathrm{e}\perp} = \hat{\boldsymbol{e}}_{\mathrm{i}\perp}\cdot\boldsymbol{E}_0/\lvert\boldsymbol{E}_0\rvert$.	where $\hat{\boldsymbol{p}}_{\mathrm{e}\parallel} = \hat{\boldsymbol{\theta}}$ and $\hat{\boldsymbol{p}}_{\mathrm{e}\perp} = \hat{\boldsymbol{\phi}}$.
492	5	homogenous	homogeneous
493	2	$\sum_{n'}\iint_{S_\mathrm{s}}$	$\iint_{S_\mathrm{s}}$
493	4	$= 0$	$= \mathbf{0}$
494	4	$\frac{\mu}{\mu_1}B_{ll'} + \frac{k}{k_1}C_{ll'}$	$\frac{\mu}{\mu_1}B_{ll'} - \frac{k}{k_1}C_{ll'}$
494	5	$\frac{k}{k_1}B_{ll'} + \frac{\mu}{\mu_1}C_{ll'}$	$-\frac{k}{k_1}B_{ll'} + \frac{\mu}{\mu_1}C_{ll'}$
494	6	$-\frac{\mu}{\mu_1}B_{ll'} - \frac{k}{k_1}C_{ll'}$	$-\frac{\mu}{\mu_1}B_{ll'} + \frac{k}{k_1}C_{ll'}$

494	7	$-\frac{k}{k_1}B_{ll'} - \frac{\mu}{\mu_1}C_{ll'}$	$\frac{k}{k_1}B_{ll'} - \frac{\mu}{\mu_1}C_{ll'}$
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	$\dfrac{1}{r^2(\theta)} = r_0 + r_1 P_1(\cos\theta) + r_2 P_2(\cos\theta)$	$\dfrac{1}{r^2(\theta)} = r_0 + r_2 P_2(\cos\theta)$
528	7^-	The relation	The relations
581	2^-	$\mathbf{r} = -\mathbf{T}_{22}^{-1}\cdot\mathbf{T}_{21} = \big(\mathbf{P}_{11} + \mathbf{W}\cdot\mathbf{P}_{21}\ldots$	$\mathbf{r} = -\mathbf{T}_{22}^{-1}\cdot\mathbf{T}_{21} = -\big(\mathbf{P}_{11} + \mathbf{W}\cdot\mathbf{P}_{21}\ldots$
608	10	$y_n(z) = -\dfrac{1}{z^{n+1}}\sum_{k=0}^{\infty}\dfrac{(2n-2k-1)!!}{k!}\left(\dfrac{z^2}{2}\right)^k$	$y_n(z) = -\dfrac{1}{z^{n+1}}\sum_{k=0}^{n}\dfrac{(2n-2k-1)!!}{k!}\left(\dfrac{z^2}{2}\right)^k + \dfrac{(-1)^{n+1}}{z^{n+1}}\sum_{k=n+1}^{\infty}\dfrac{1}{k!(2k-2n-1)!!}\left(-\dfrac{z^2}{2}\right)^k$
619	2^-	$G_n(z) = -\dfrac{n}{z} - \dfrac{1}{n/z - G_{n-1}(z)}$	$G_n(z) = -\dfrac{n}{z} + \dfrac{1}{n/z - G_{n-1}(z)}$
628	10	$Y_{\sigma ml} = \frac{C_{lm}}{2C'_{lm}}\begin{Bmatrix} Y_{lm} + Y_{l-m} \\ -\mathrm{i}Y_{lm} + \mathrm{i}Y_{l-m}\end{Bmatrix}$	$Y_{\sigma ml} = \frac{C_{lm}}{2C'_{lm}}\begin{Bmatrix} Y_{lm} + Y_{lm}^* \\ -\mathrm{i}Y_{lm} + \mathrm{i}Y_{lm}^*\end{Bmatrix}$
634	13	[38, page 170]	[40, page 216]
643	3	inverse	
643	4	$f(x) = \dfrac{1}{2\pi}\int_{-\infty}^{\infty}\hat{f}(\xi)\mathrm{e}^{-\mathrm{i}x\xi}\,\mathrm{d}\xi = 0, \quad x<0$	$\hat{f}(\xi) = \int_{-\infty}^{\infty} f(x)\mathrm{e}^{-\mathrm{i}x\xi}\,\mathrm{d}x = 0, \quad \xi<0$
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^-	$\boldsymbol{K}(\hat{\boldsymbol{r}}) = \hat{\boldsymbol{\phi}}\frac{\mathrm{i}ka^2\eta_0}{2a}J_1(ka\sin\theta)$	$\boldsymbol{K}(\hat{\boldsymbol{r}}) = \hat{\boldsymbol{\phi}}\frac{Ika\eta_0}{2}J_1(ka\sin\theta)$