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Errata List for: **Digital Communication over Fading Channels: A Uniform Approach to Performance Analysis (1st Printing)**

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Page	Line	As It Now Appears	As It Should Appear
18	5 lines below Eq. (2.5)	....PDFs, MGFs, AFs....	....PDF's, MGF's, AF's....
27	8, 9	....RVs....	....RV's....
27	28	PDPs...	PDP's...
32	20	...operations on $x(t)$...	...operations on $\tilde{x}(t)$...
33	1 line below Eq. (3.4)	... $\mathrm{Re}\{\tilde{y}_{nk}\} = \alpha_k a_n A_c T_s + \mathrm{Re}\{\alpha_k \tilde{N}_n\}$ is..	... $\mathrm{Re}\{\tilde{y}_{nk}\} - \frac{1}{2}\alpha_k^2 A_c T_s$ is...
34	Figure 3.2a	correct as shown	Choose Data Amplitude Corresponding to $\max_i \left[\mathrm{Re}\{\tilde{y}_{ni}\} - \frac{1}{2}\alpha_i^2 A_c T_s\right]$
35	1 line below Eq. (3.8)	...largest y_{Ink} and y_{Qnk}...	...largest $y_{Ink} - \frac{1}{2}\alpha_k^2 A_c T_s$ and $y_{Qnk} - \frac{1}{2}\alpha_k^2 A_c T_s$...
36	Figure 3.3a	correct as shown	Choose Data Amplitude Corresponding to $\max_i \left[\mathrm{Re}\{\tilde{y}_{ni}\} - \frac{1}{2}\alpha_i^2 A_c T_s\right] = \max_i \left[y_{Ini} - \frac{1}{2}\alpha_i^2 A_c T_s\right]$ Choose Data Amplitude Corresponding to $\max_i \left[\mathrm{Im}\{\tilde{y}_{ni}\} - \frac{1}{2}\alpha_i^2 A_c T_s\right] = \max_i \left[y_{Qni} - \frac{1}{2}\alpha_i^2 A_c T_s\right]$
38	1	a quadrature information...	an information...
41	20,23,25	...the envelope...	...the instantaneous amplitude...
41	22	...which is clearly a smaller envelope fluctuation....	...which clearly results in a smaller instantaneous amplitude fluctuation...

42	7 lines from bottom	...envelope....	...instantaneous amplitude...
72	2 lines below Eq. (4.4)	vector $\mathbf{s} = (x + x_1)$....	vector $\mathbf{s} = (-x_1, -y_1)$....
72	1 line below Eq. (4.6)	...using (4.6)...	...using (4.5)...
72	Add to end of Eq. (4.7)		$, x_1 \geq 0, y_1 \geq 0$
73	Fig. 4.1 (part b)		Replace with revised figure
81	Eq. (4.33)	$\ldots = \frac{1}{\alpha^{M-1}} \int_\beta^\infty x^m \ldots$	$\ldots = \frac{1}{\alpha^{m-1}} \int_\beta^\infty x^m \ldots$
82	Eq. (4.34)	$\ldots = \frac{\beta}{\alpha} \exp\left[-\left(\frac{\alpha^2+\beta^2}{2}\right)\right] I_{m-1}(\alpha\beta) + \ldots$	$\ldots = \left(\frac{\beta}{\alpha}\right)^{m-1} \exp\left[-\left(\frac{\alpha^2+\beta^2}{2}\right)\right] I_{m-1}(\alpha\beta) + \ldots$
86	Eq. (4.52)	$Q_m(\alpha, \zeta\alpha) = \frac{1}{2\pi}\int_{-\pi}^{\pi} \ldots..$	$Q_m(\alpha, \zeta\alpha) = 1 - \frac{1}{2\pi}\int_{-\pi}^{\pi} \ldots..$
86	1 line below Eq. (4.52)	.... by Simon [9, Eqs. (8) and (10)].......	by Simon [9, Eqs. (7) and (10)]...
87	Footnote 11, line 3	....in the literature [23], they........	in the literature [24], they....
96	Eq. (4A.5)	$\frac{2}{\pi}\int_0^\infty \frac{e^{-z^2(t^{2+1})}}{t^2+1} dt = \operatorname{erfc}(z)$	$\frac{2}{\pi}\int_0^\infty \frac{e^{-z^2(t^2+1)}}{t^2+1} dt = \operatorname{erfc}(z)$
102	Eq. (5.9)	$\ldots \frac{q^2 a^2 \bar{\gamma}^2}{(1+q^2)^2 \sin^4\theta}$	$\ldots \frac{q^2 a^4 \bar{\gamma}^2}{(1+q^2)^2 \sin^4\theta}$
103	Eq. (5.17a)	$\frac{1}{2}\left[1 - \mu^2(c)\sum_{k=0}^{m-1}\binom{2k}{k}\left(\frac{1-\mu(c)}{4}\right)^k\right]$	$\frac{1}{2}\left[1 - \mu(c)\sum_{k=0}^{m-1}\binom{2k}{k}\left(\frac{1-\mu^2(c)}{4}\right)^k\right]$
149	Eq. (6.20)	$Q_m\left(\sqrt{\frac{2m\rho}{(1-\rho)\Omega_1}}r, \sqrt{\frac{2m\rho}{(1-\rho)\Omega_2}}r\right)$	$Q_m\left(\sqrt{\frac{2m\rho}{(1-\rho)\Omega_1}}r, \sqrt{\frac{2m}{(1-\rho)\Omega_2}}r\right)$
149	Eq. (6.20)	$Q_m\left(\sqrt{\frac{2m\rho}{(1-\rho)\Omega_2}}r, \sqrt{\frac{2m\rho}{(1-\rho)\Omega_1}}r\right)$	$Q_m\left(\sqrt{\frac{2m\rho}{(1-\rho)\Omega_2}}r, \sqrt{\frac{2m}{(1-\rho)\Omega_1}}r\right)$

150	Eq. (6.21)	$Q_m\left(\sqrt{\frac{2m\rho}{1-\rho}\left(\frac{\gamma}{\bar{\gamma}_1}\right)},\sqrt{\frac{2m\rho}{1-\rho}\left(\frac{\gamma}{\bar{\gamma}_2}\right)}\right)$	$Q_m\left(\sqrt{\frac{2m\rho}{1-\rho}\left(\frac{\gamma}{\bar{\gamma}_1}\right)},\sqrt{\frac{2m}{1-\rho}\left(\frac{\gamma}{\bar{\gamma}_2}\right)}\right)$
150	Eq. (6.21)	$Q_m\left(\sqrt{\frac{2m\rho}{1-\rho}\left(\frac{\gamma}{\bar{\gamma}_2}\right)},\sqrt{\frac{2m\rho}{1-\rho}\left(\frac{\gamma}{\bar{\gamma}_1}\right)}\right)$	$Q_m\left(\sqrt{\frac{2m\rho}{1-\rho}\left(\frac{\gamma}{\bar{\gamma}_2}\right)},\sqrt{\frac{2m}{1-\rho}\left(\frac{\gamma}{\bar{\gamma}_1}\right)}\right)$
201	6 lines below Eq. (8.28)	obtained as [5,	obtained as [6,
201	Eq. (8.29)	$P_k=\frac{1}{2\pi}\int_0^{\pi(1-(2k-1)/M)}\exp\left(-\frac{E_s}{N_0}\frac{\sin^2[(2k-1)\pi]/M}{\sin^2\theta}\right)d\theta - \frac{1}{2\pi}\int_0^{\pi(1-(2k+1)/M)}\exp\left(-\frac{E_s}{N_0}\frac{\sin^2[(2k+1)\pi]/M}{\sin^2\theta}\right)d\theta$	$P_k=\frac{1}{2\pi}\int_0^{\pi(1-(2k-1)/M)}\exp\left(-\frac{E_s}{N_0}\frac{\sin^2[(2k-1)\pi/M]}{\sin^2\theta}\right)d\theta - \frac{1}{2\pi}\int_0^{\pi(1-(2k+1)/M)}\exp\left(-\frac{E_s}{N_0}\frac{\sin^2[(2k+1)\pi/M]}{\sin^2\theta}\right)d\theta$
224	Eq. (8.117)	$K_\pm=\frac{1}{2}\left(\frac{2k\pm1}{M}\right)\left[1-\sqrt{\frac{g_{PSK}\bar{\gamma}_s}{1+g_{PSK}\bar{\gamma}_s}}\left(\frac{M}{(2k\pm1)\pi}\right)\right. \times\tan^{-1}\left.\left(\sqrt{\frac{1+g_{PSK}\bar{\gamma}_s}{g_{PSK}\bar{\gamma}_s}}\tan\left[\frac{(2k\pm1)\pi}{M}\right]\right)\right]$	$K_\pm=\frac{1}{2}\left(\frac{2k\pm1}{M}\right)\left[1-\sqrt{\frac{g_{PSK}(k^\pm)\bar{\gamma}_s}{1+g_{PSK}(k^\pm)\bar{\gamma}_s}}\left(\frac{M}{(2k\pm1)\pi}\right)\right. \times\tan^{-1}\left.\left(\sqrt{\frac{1+g_{PSK}(k^\pm)\bar{\gamma}_s}{g_{PSK}(k^\pm)\bar{\gamma}_s}}\tan\left[\frac{(2k\pm1)\pi}{M}\right]\right)\right],$ $g_{PSK}(k^\pm)\triangleq\sin^2\frac{(2k\pm1)\pi}{M}$
270	Fig. 9.3	dotted line curves	change to dashed line curves

272	1 line below Eq. (9.20)	$g_{QAM} = 3/2(M-1)$	$g_{QAM} = 3/\left[2(M-1)\right]$
298	Eq. (9.107)	$f_1(L;\zeta,\eta;\phi) = ...$	$f_1(L;\zeta,1;\phi) = ...$
305	Eq. (9.119)	$\beta_{ki} = \sum_{n=k-L+1}^{k} \frac{\beta_{n(i-1)}}{(k-n)!} I_{[0,(i-1)(L-1)]}(i)$	$\beta_{ki} = \sum_{n=k-L+1}^{k} \frac{\beta_{n(i-1)}}{(k-n)!} I_{[0,(i-1)(L-1)]}(n)$
307	Eq. (9.25)	$\mathrm{Re}\{\cdots\} + \mathrm{Im}\{\cdots\} \sin \Phi_k$	$\mathrm{Re}\{\cdots\} \cos \Phi_k + \mathrm{Im}\{\cdots\} \sin \Phi_k$
309	Sect. 9.4.2.2, line 4	$[\bar{\gamma}_l = \bar{\gamma}_1 \exp(-\delta(l-1))$	$\left[\bar{\gamma}_l = \bar{\gamma}_1 \exp(-\delta(l-1))\right]$
314	1 line above Eq. (9.142)	....using Eq. (3.462.1) of....	....using Eq. (9.240) of....
316	Figs. 9.14(c),(d)	labeling of x axis: -10,-5...,15,20	labeling of x axis: -10,-5...,10,15
317	Table 9.3	$(L, n^2\ dB, d)$	$(L, n^2\ dB, \delta)$
317	line 3	Turin et al. [82,83]	Patenaude et al. [82,83]
322	2 lines after Eq. (9.152)	missing equation number	(9.153)
322	End of Eq. (9.156)	$s \geq 0$	$s < 0$
329	Fig. 9.18	curves computed for M=8	curves need to be computed for M=16
330	line 1	but for the the..	but for the ...
354	2	...PDFs	...PDF's

357	Eq. (9.251)	Replace entire equation	$P_b(E)=\left(1-\frac{1}{2}e^{-\gamma_T/\bar{\gamma}}\right)\left(1-\sqrt{\frac{\bar{\gamma}}{1+\bar{\gamma}}}\right) -\frac{1}{2}\left\{1-2e^{-\gamma_T/\bar{\gamma}}Q\left(\sqrt{2\gamma_T}\right)-\sqrt{\frac{\bar{\gamma}}{1+\bar{\gamma}}}\left[1-2Q\left(\sqrt{2\gamma_T(1+\bar{\gamma})/\bar{\gamma}}\right)\right]\right\} =\frac{1}{2}\left(1-e^{-\gamma_T/\bar{\gamma}}\right)\left(1-\sqrt{\frac{\bar{\gamma}}{1+\bar{\gamma}}}\right)+e^{-\gamma_T/\bar{\gamma}}Q\left(\sqrt{2\gamma_T}\right) -\sqrt{\frac{\bar{\gamma}}{1+\bar{\gamma}}}Q\left(\sqrt{2\gamma_T(1+\bar{\gamma})/\bar{\gamma}}\right)$
388	Eq. (9.333)	$\cdots=1-e^{-\gamma_{th/\bar{\gamma}}}\cdots$	$\cdots=1-e^{-\gamma_{th}/\bar{\gamma}}\cdots$
430	1	....transformation (9.3.17)	....transformation (9.316)
430	Eq. (9C.5)	(9C.5)	(9C.4)
430	Equation below Eq. (9C.5)	has no equation number	(9C.5)
475	2 lines after Eq. (11.4)	....wider then	...wider than
477	1 line after Eq. (11.10)	$\bar{r}_k$	r_k
477	2 lines before Eq. (11.11)	$\mathrm{E}\left\{\bar{r}_k / \left\{\alpha_{k,l}\right\}_{l=1}^{L}\right\}$	$E\left\{r_k \middle\| \left\{\alpha_{k,l}\right\}_{l=1}^{L}\right\}$
477	1 line before Eq. (11.11)	$\mathrm{var}\left\{\bar{r}_k / \left\{\alpha_{k,l}\right\}_{l=1}^{L}\right\}$	$\mathrm{var}\left\{r_k \middle\| \left\{\alpha_{k,l}\right\}_{l=1}^{L}\right\}$
477	Eq. (11.11)	$\mathrm{E}\left\{r_k \middle\| \left\{\alpha_{k,l}\right\}_{l=1}^{L}\right\}$	$E\left\{r_k \middle\| \left\{\alpha_{k,l}\right\}_{l=1}^{L}\right\}$

477	Eq. (11.13)	$\frac{\left(\mathrm{E}\left[r_i \middle| \underline{\alpha}_i\right]\right)^2}{2\,\mathrm{var}\left(r_i \middle| \underline{\alpha}_i\right)}$	$\frac{\left(E\left\{r_k \middle| \left\{\alpha_{k,l}\right\}_{l=1}^{L}\right\}\right)^2}{2\,\mathrm{var}\left\{r_k \middle| \left\{\alpha_{k,l}\right\}_{l=1}^{L}\right\}}$
478	10 lines after Eq. (11.15)	RVs	RV's
483	1 line before Eq. (11.22)	$\mathrm{E}\left\{r_k \middle| \left\{\alpha'_{k,l}\right\}_{l=1}^{M_f}\right\}$	$E\left\{r_k \middle| \left\{\alpha'_{k,l}\right\}_{l=1}^{M_f}\right\}$
483	Eq. (11.22)	$\mathrm{E}\left\{r_k \middle| \left\{\alpha'_{k,l}\right\}_{l=1}^{M_f}\right\}$	$E\left\{r_k \middle| \left\{\alpha'_{k,l}\right\}_{l=1}^{M_f}\right\}$
501	last	$p\left(\mathbf{u}_k \middle| \boldsymbol{y}\right)$	$p\left(\mathbf{u} \middle| \boldsymbol{y}\right)$
502	l	$p\left(\boldsymbol{y} \middle| \mathbf{u}_k\right)$	$p\left(\boldsymbol{y} \middle| \mathbf{u}\right)$
506	1 line below Eq. (12,34)	$\bar{\gamma} = \overline{\alpha^2} E_s / N_0$	$\bar{\gamma} = \overline{\alpha^2} E_b / N_0$