Errata for 5th Printing

Principles of Modern Radar: Basic Principles

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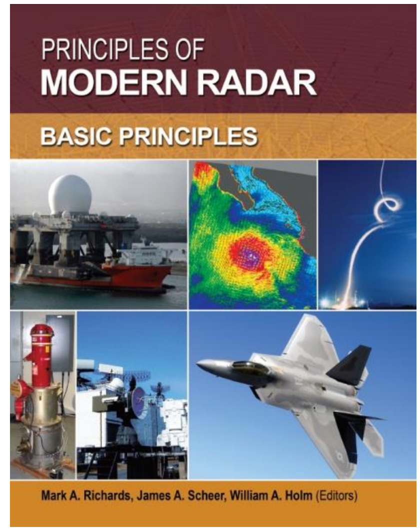
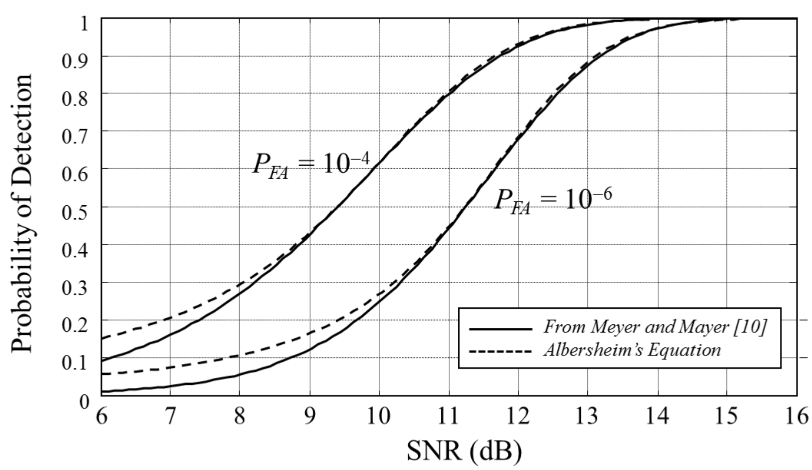


Chapter	Page	Location on Page	Correction
1	55	Reference [2]	Change the year from 2003 to 2008.
2	75	Section 2.12	Change the antenna diameter from 2.4 m to 2.5 m
3	106	Fig. 3-10	The data in the figure s for a Swerling 1 target, not Swerling 0 as intended. Also, Albersheim's equation does not apply to the Swerling 1 case, so it is not clear what the dotted lines represent. Here is a corrected figure:  The figure caption should be modified slightly to read: FIGURE 3-10: SNR vs. P_D for a Swerling 0 target with $N = 1$ using Albersheim's equation, plotted with results from Meyer and Mayer [10].
3	107	Last sentence of first paragraph	Change "… results for these cases." To "… results for these cases over most of the range shown."
4	126	4th line	Change "Figure 4-6" to "Figure 4-7".
4	128	Figure 4-8	Change the units of the abscissa (*x* axis) label from g/cm^3 to g/m^3
5	201	Table 5-9 caption	Change "Circumference" to "Diameter"

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5	203	Table 5-10, 3rd line in the table (A @ 10 GHz)	Change the "Soil/Sand" value from 0.25 to 0.025. Change the "Tall Grass/Crops" value from 0.006 to 0.06.
5	204	Table 5-11	2nd equation: change "222" to "22.2" 5th equation: change $A_i = \sigma_\varphi{}^4\left(1+\sigma_\varphi{}^4\right)$ to $A_i = \sigma_\varphi{}^4 \Big/ \left(1+\sigma_\varphi{}^4\right)$ 7th equation: change $qw = 1.1/\left(\lambda + 0.015\right)^{-0.4}$ to $qw = 1.1/\left(\lambda + 0.015\right)^{0.4}$
5	210	Problem 3	Change the SNR at R_0 = 10 km from 30 dB to 55 dB, and the SCR at R_0 = 10 km from 20 dB to 45 dB. (This change does not alter the answer to the problem, but it provides a more reasonable SNR and SCR at the range at which they are equal.)
7	249	Fig. 4-3 caption	Replace the entire caption with the following: (a) Dihedral (left) and trihedral (right) corner reflectors. (b) Typical trihedral RCS vs. azimuth angle. (Courtesy of Professor Nadav Levanon, Tel-Aviv University.)
7	271	Problem 12	Add the following sentence at the end of the problem statement: "Note that when α is an integer, $\Gamma(\alpha) = (\alpha-1)!$."
8	279	Eqs. (8.16)	Change "dot" to an in-line asterisk to signify convolution, as follows: $p_I(t) = \sum_{n=-\infty}^{\infty} p(t - n\cdot T) = p(t) * \sum_{n=-\infty}^{\infty} \delta_D(t - n\cdot T)$
8	281	Eq. (8.21)	Change "dots" to in-line asterisks to signify convolution, as follows: $P_F(f) = T_d \operatorname{sinc}(\pi f T_d) * P_F(f)$ $= T_d \operatorname{sinc}(\pi f T_d) * \left\{ \frac{A\tau}{T} \sum_{k=-\infty}^{\infty} \operatorname{sinc}(\pi\tau k \cdot PRF) \cdot \delta_D(f - k\cdot PRF) \right\}$ $= \frac{AT_d\tau}{T} \sum_{k=-\infty}^{\infty} \operatorname{sinc}(\pi\tau k \cdot PRF) \operatorname{sinc}\left[\pi(f - k\cdot PRF)T_d\right]$
8	274	First full paragraph, beginning with the second sentence of that paragraph	Keep the first sentence of this paragraph, but replace the remainder (beginning with "A proper description …" and continuing up to Eq. (8.10) with the following text: "In general, a proper description of the Doppler shift for electromagnetic waves requires the theory of special relativity. However, in a monostatic radar, where the transmitter and receiver are at the same location and do not move with respect to each other, the classical and special-relativity expressions for the two-way Doppler shift are in agreement. Suppose a scatterer in the radar field of view is moving with a velocity component, v, toward the radar. Then both classical and relativistic physics predict that the receive frequency will be"
8	281	Last line before Eq. (8.21)	Change "dot" to an in-line asterisk to signify convolution. The line should read as follows: "… convolution property of impulses, $X(f) * \delta_D(f - f_0) = X(f - f_0)$, the spectrum of the finite pulse train becomes"
8	290	6th line of text	Change "… spread out over $B\tau$ seconds." to "… spread out over $B\tau$ samples.".

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9	337	Fig. 9-28	Make the following changes to the box labels in the figure (working from right to left): • Change Δt_0 to Δt_1 • Change $2\Delta t_0$ to Δt_2 • Change $(n-1)\Delta t_0$ to Δt_{n-1}
10	386	Ref. [14]	Change "Mai, T.N.," to "Ngo, M.T.,"
14	541	1st sentence below Eq. (14.73)	Change $\|P\| = P^H P$ to $\|P\| = \sqrt{P^H P}$.
15	564	Eq. (15.22)	Change the Bessel function portion to read $I_0\left(\frac{2\tilde{m}z}{\sigma_n^2}\right)$ (i.e., change $\tilde{m}^2$ to $\tilde{m}$, but only inside the Bessel f unction argument).
15	580	Table 15-2	Reset the last equation (the one for Case 4, which is actually two equations on two lines) to read as follows: $c^N \sum_{k=0}^{N}\left(\sum_{l=0}^{2N-1-k} \frac{e^{-cT}(cT)^l}{l!}\right)\frac{N!}{k!(N-k)!}\left(\frac{1-c}{c}\right)^{N-k}, \quad T > N(2-c)$ $1-c^N \sum_{k=0}^{N}\left(\sum_{l=2N-k}^{\infty} \frac{e^{-cT}(cT)^l}{l!}\right)\frac{N!}{k!(N-k)!}\left(\frac{1-c}{c}\right)^{N-k}, \quad T < N(2-c)$
16	614	Eq. (16.53)	Replace the upper summation limit N_L with N_{T_s} .
16	614	Eqs. (16.53) and (16.54)	The γ_l on the left hand side of equation 16.53 and 16.54 should read $\gamma_l(\nu)$.
20	812	5th line of Section 20.12.4	Change " $\hat{a}_n = a_N^*$ " to " $\hat{a}_n = a_n^*$ "
20	831	Ref. [29]	Change "Keel, B.M., and Heath, T.H.," to "Keel, B.M., Baden, J.M., and Heath, T.H.,"
20	834	Problem 10	Change "(third property)" to "(second property)"
21	876	Fig. 21-32	Change "$_t$ank" in the label on the top of each of the three images in the figure to "tank" (i.e., the "t" should not be subscripted)
App. B	899	Solution to Problem 17 of Ch. 1	The correct solutions are. (a) 15.7 degrees (b) 4.25 degrees (c) 361.2 feet (d) 97.9 feet
App. B	900	Solution to Problem 1 of Ch. 5	The correct solutions are 15.3° at R = 10 km and 53.9° at R = 50 km.