DISCRETE RANDOM SIGNALS AND STATISTICAL SIGNAL PROCESSING

Errata (October 22, 2002)

p. x §9.3 change Least-Squares to Least Squares
p. xvi line 7 change most to all
p. xviii 8th from bottom change there an to there is an
p. 9 Fig. 1.8 (b) change encoder to decoder
p. 30 Eq. (2.40) change to large $\infty$ in limits of integration (4 places)
p. 40 Fig. 2.3 (a) change $\Delta x$ to $\Delta x$ (roman font, 2 places)
p. 43 Eq. (2.100) change $(x - m)^2$ to $|x - m|^2$ (in exponent)
p. 51 Eq. (2.139) (second column of matrix $E$) change $e_1$ to $e_2$
p. 52 line below (2.145) change canonical to canonical
p. 56 2nd line change unitary to orthonormal above (2.158)
p. 57 line 1 change unitary to orthonormal
p. 59 Fig. 2.5 caption change Concentration to concentration
p. 65 top equation insert $=\text{between first vector and matrix}$
p. 81 Prob. 2.35 change hermitian to Hermitian
p. 105 3rd from bottom change Fig. 3.10(a) to Fig. 3.10(b)
p. 112 4th line (equation) change $P_{2|3}$ to $P_{2|1}$
p. 125 Fig. 3.17 change dashed line above $t_2$ to solid
p. 126 2nd from bottom change form to can be used to form
p. 127 3rd, 4th line move (recall ... increments) to after the word
after equation independent in first line after the equation
p. 132 Ref. 3 change Schubert to Shubert
p. 137 Prob. 3.25 change Wiener to white noise (2 places)
p. 138 Prob. 3.25 change (3.67) to $\zeta[i]$ in (3.67)
p. 138 Prob. 3.25(a) change Wiener to white noise
p. 138 Prob. 3.26 (last line, expression for determinant) change $\sigma_o^2$ to $\sigma_o^{2N}$
p. 145 2nd line change second occurrence of $x[n_0]$ to $x[n_1]$
after (4.14) and second occurrence of $x[n_1]$ to $x[n_0]$
p. 146 Fig. 4.2 insert $=\text{in equation before summations}$
p. 150 Eq. (4.25) change $C_x[N - 1, 2]$ to $C_x[N - 1, 1]$
p. 154 Fig. 4.4 arrowheads on both ends of crossed lines
p. 154 Fig. 4.5 change $R_{yx}[l] = 0$ to $R_{yx}[l] \neq 0$
p. 155 matrix $R_{xy}$ elements $R_{xy}[\cdot]$ should not be bold
p. 165 Example 4.5 change $R_x(l)$ to $R_x[l]$ (3 places)
p. 166 Example 4.5 (1st equation) change $R_x(l)$ to $R_x[l]$
p. 166 Fig. EX4.5b $w$ should be the same font used in the text
p. 167 Example 4.5 change $R_x(l)$ to $R_x[l]$ (2 places)
p. 171 Fig. 4.10 $v, x$ should be the same font used in the text
p. 183 4th from bottom change useful to a useful
p. 195 line 11 change resonable to reasonable
p. 196  Fig. 4.19(c)  change  $R_x(l)$ to $R_x[l]$

p. 199  line above (4.150)  change  $t_2 > t_1$ to $t_2 < t_1$

p. 209  Fig. 4.24(b)  change  $C_x^{(3)}[-l_2,l_2-l_1]$ to $C_x^{(3)}[-l_2,l_1-l_2]$

p. 215  Ref. 23  change  Nikias to Nikias and Athina P. Petropulu

p. 215  Ref. 23  change  Moments in Digital Signal Processing  to  Spectra Analysis

p. 232  Eq. (5.23)  change  $h[n,k]$ to $h[n_1,k]$

p. 236  13th from bottom  change  only the to only of the

p. 245  1st equation  change  $\sigma$ to $\sigma^2$

p. 264  Fig. 5.17  in 3rd quadrant: change  $G_1$ to $G_2$ (two places)

p. 266  Table 5.3  second line: change  $ax - 1$ to $az - 1$

p. 276  line 6  change  $f_y/x$ to $f_y|x$

p. 285  2 lines above (6.11)  change  values to counts

p. 288  Eq. (6.22)  change  $x_1, x_2, x_3, x_4$ to $x_1, y_1, y_2, y_3, y_4$

p. 291  Fig. 6.4  change  $\gamma(\omega)$ for expectation to $\gamma(\omega)$ (two places)

p. 300  7th equation  change  $\gamma(\omega) \geq 0$ to $\gamma(\omega) \geq 0$

p. 302  Eq. (6.54)  change  $m_x$ to $\tilde{m}_x$

p. 305  6th below (6.64)  change  consistent to consistent

p. 315  Example 6.6  (1st line of 2nd paragraph)  change  strip to line

p. 316  Fig. EX6.6a  change  shaded strip to a line

p. 320  line 3 in 3rd par.  change  resonable to reasonable

p. 332  Prob. 6.12 (a)  delete the expression $R(0), R(1), R(2)$

p. 333  Prob. 6.16 (a)  delete the word below

p. 333  Prob. 6.16 (b)(c)  delete the word minimum (2 places)

p. 334  Prob. 6.21  change  $f_{xy}$ to $f_{xy}$

p. 339  2 lines above (7.4)  change  $(a^\perp)$ to $(a^\perp)$

p. 342  Fig. 7.2  move $n$ to under the axis directly below the sample $x[n]$

p. 343  line 2  change  the the to the

p. 347  Fig. 7.4  variable $x$ should be conjugated in the following expressions:

\[ E\{\varepsilon[1]x^*[0]\} = 0, \ E\{\varepsilon[2]x^*[1]\} = 0, \ E\{\varepsilon[2]x^*[0]\} = 0 \]

(with $\{\}$ for the expectation.)

p. 357  1st line after (7.79)  strike out sentence: The errors . . . process.
p. 400  Prob. 7.4 (a)  change values to correlation function
p. 402  Prob. 7.11 (b)  change equations to equation
p. 404  Prob. 7.23  delete the last sentence (Also ... error.)

p. 404  Prob. 7.24  change \( s[n] = \left( \frac{1}{\sqrt{2}} \right)^n u[n] \) to \( R_s[l] = \left( \frac{1}{\sqrt{2}} \right)^{|l|} \)

p. 405  Prob. 7.27  change for conditions to for the conditions
p. 405  Prob. 7.28  change entries in 1st column of table to \(-1, 0, 1, 2, 3\)

p. 408  Comp. As. 7.6  change 7.2 to 7.5 (first line)

p. 433  Fig. 8.5  move \( z^{-1} \) left underneath branch
move \( \varepsilon_{b_{p-1}} \) right underneath node

p. 443  Eq. (8.122)  change

p. 448  Step 1 (a)  change \( R_x^*[0] \) to \( R_x[0] \)

p. 453  Fig. 8.22  insert \( \lambda = \) between first vector and matrix

p. 461  Eq. (8.161)  (3rd line of equation) change \(-K_{p-1} \) to \( K_{p-1} \)

p. 470  line 6  change \( s_k^{(1)} \) to \( s_k^{(2)} \)

p. 473  Fig. 8.24 (b)  move lower branch gains \( z^{-1} \) and \(-1 \) closer to the branches

p. 473  Fig. 8.24 (b)  change \( \varepsilon_4 \) to \( \varepsilon_4[n] \)

p. 485  line 10  (2nd line after (8.241)) change \( a_p^{(p)}* \) to \(-a_p^{(p)}* \)

p. 497  Prob. 8.3  change long dash (—) to a comma

p. 497  Probs. 8.3, 8.4  change \( a_1 \) and \( a_2 \) to \( a_1 \) and \( a_2 \) (3 places)

p. 497  Prob. 8.5  change Given to You are given
p. 499  Prob. 8.12  change 0.2929j to 0.2928j
p. 499  Prob. 8.19  (2nd line) change matrix to function

p. 501  Comp. As. 8.2  (part (b)) change 8.8 to 8.19

p. 512  line 18  delete word however and commas
p. 512  lines 13,15,16,26  change \( S_x \) to \( S_y \)

p. 513  lines 3,5  change \( S_x \) to \( S_y \) (3 places)

p. 514  lines 1,2,4,5,7  change \( S_x \) to \( S_y \)

p. 514  lines 7,8,10  change 0.396 to 1.262 (4 places)
          change 1.262 to 0.396 (4 places)
          (filter should be minimum phase)

p. 519  line 28  change throughout to throughout
p. 526  Fig. 9.5  hat should be bold on symbol \( \hat{d} \) (both parts of figure)

p. 529  line below (9.74)  change \( S \) to \( S_1 \)

p. 533  Eq. (9.84)  change \( \Delta \) to bold \( \Delta \)

p. 543  Eq. (9.121)  add \(+\lambda^*(1-\i\cdot\mathbf{a})\) to first line before the]

p. 560  Eq. (9.157)  change \( x[1] \) to \( x[1] \)

p. 561  matrix equation  change \( 3(-1)^4 \) to \( 4(-1)^4 \)

p. 562  Fig. 9.11(b)  change lower + sign on summation to −

p. 562  Eq. (9.162)  change \( n = P \) to \( n = \min(P,Q) \)

p. 563  line 16  change \( n = 0, 1, \ldots \) to \( n = 2, 3, \ldots \)

p. 563  line above (9.163)  insert at beginning of sentence: For \( P \geq Q \)

p. 575  Fig. 9.21(b)  (in key) change + to ×, change * to ◦

p. 581  Prob. 9.17  interchange \( \mathbf{u}^* \) and \( \mathbf{v}^* \) in the definition of \( \mathbf{w}_2 \)

p. 583  Comp. As. 9.1  (second line of part (a)) change three to two

p. 584  line 5  change Shank’s to Shanks’
p. 595 4th equation  
change $L - 1$ to $L$ and $-L + 1$ to $-L$

p. 613 2nd equation  
change $XX^*T$ to $X^*TX$

p. 615 §10.4.1  
(1st line) change Soviet to Russian

p. 621 Fig. 10.14  
$\Sigma \eta$ should be bold (2 places)

p. 625 middle of page  
change $e_3 = \begin{bmatrix} 0 & -\frac{1}{\sqrt{2}} \\ -\frac{1}{\sqrt{2}} & 0 \end{bmatrix}$ to $e_3 = \begin{bmatrix} -\frac{1}{\sqrt{2}} \\ 0 \end{bmatrix}$

p. 627 Fig. 10.16  
change $-\sigma_0^2$ to $\sigma_0^2$ and move left

p. 630 line 1  
change covariance to correlation

p. 635 Eq. (10.168)  
change $S^*T \Sigma_0 S$ to $S \Sigma_0 S^*$

p. 635 line 23  
change $|a|^2$ to $|a|2$

p. 636 line above (10.177)  
change $R'_x$ to $R'_x$

p. 641 Fig. 10.19 (a)–(e)  
align symbols on vertical axis to read $|A(e^{i\omega})|^2$

p. 644 Fig. 10.21  
legend: change ◯ to ○; change + to ·

p. 644 Fig. 10.21 caption  
change ©IEEE 1982 to ©IEEE 1986

p. 645 Eq. (10.188)  
change $x[N+1]$ to $x[N]$

p. 648 Step 7  
change (10.192) to (10.184)

p. 668 below (10.266)  
change $n_F = \max\ldots$ to $n_F = \min\ldots$

p. 671 Fig. 10.28  
move $L_2$ one tick mark up

p. 681 line 2  
problem number for problem 10.4 is missing

p. 683 Comp. As. 10.3  
(line 1) change Assignment 9.1 to Assignments 9.1–9.3

p. 684 Comp. As. 10.4  
(part (b)) delete time

p. 684 Comp. As. 10.5  
(part (iv)) change Principle to Principal

p. 702 Fig. B.6  
change $f_0$ to $f_0$

p. 710 Fig. B.11 (b)  
change $S_x^c + (f + f_0)$ to $S_x^c (f + f_0)$

p. 710 Eq. (B.43)  
change $-2\text{Im}$ to $2\text{Im}$

p. 725 column 1  
entry norm -of a vector change 18 to 18, 23