

First-edition-book Errata, Version 1.21

References

Reference 6

Morrison, N., "Introduction to Sequential Smoothing and Prediction"

The statement

is available from <http://goo.gl/CM9cN>

should read as follows:

is available from <https://goo.gl/CM9cN>

Preface

Page xxv

The statement

Video_Clips\TWS\Documents\Readme.PDF

should read as follows:

Part_2\Video_Clips_TWS\Documents\Readme.PDF

Page xxv

The statement

Video_Clips\TWS\Flights

should read as follows:

Part_2\Video_Clips_TWS\Flights

Chapter 1

Page 3

The statement

Video_Clips\TWS\Documents\Readme.PDF

should read as follows:

Part_2\Video_Clips_TWS\Documents\Readme.PDF

Page 3

The statement

Video_Clips\TWS\Flights

should read as follows:

Part_2\Video_Clips_TWS\Flights

Page 18

The item

$X^*_{t_{n+1}, t_n}$

should read as follows:

$X^*_{t_{n+1}, t_n}$

Page 39

Footnote 13 should read as follows:

See References 106 – 110 and 157.

Page 40

The statement

with a $(1-Hz)$ data rate

should read as follows:

with a $1-Hz$ data rate

Page 40

The statement

In the down-loadable material there is a folder called ***Video_Clips***, in which you will find two sub-folders:

should read

In the down-loadable material there are two folders called ***Part_2*** and ***Part 3*** in which you will find sub-folders relating to ***Doppler*** and ***TWS***:

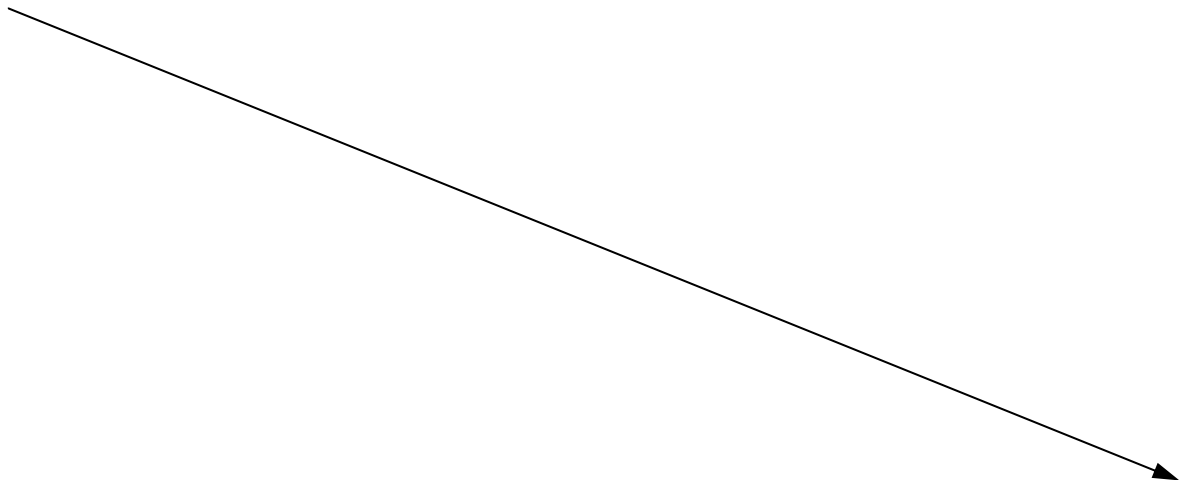
Page 41

The statement

Please include the words 'Tracking Filter' in the title of your email.

should read as follows

Please include the words *Tracking Filter Engineering* in the title of your email.



Chapter 2

Page 83

Equation (2.6.16) currently reads as follows:

$$D \begin{pmatrix} \delta x(t) \\ \delta \dot{x}(t) \end{pmatrix} = \begin{pmatrix} 0 & I \\ 0 & 2k\dot{x}(t) \end{pmatrix}_{\mathbf{x}(t)} \begin{pmatrix} \delta x(t) \\ \delta \dot{x}(t) \end{pmatrix} \quad (2.6.16)$$

The four δ 's should not be bold, and so the equation should read as follows:

$$D \begin{pmatrix} \delta x(t) \\ \delta \dot{x}(t) \end{pmatrix} = \begin{pmatrix} 0 & I \\ 0 & 2k\dot{x}(t) \end{pmatrix}_{\mathbf{x}(t)} \begin{pmatrix} \delta x(t) \\ \delta \dot{x}(t) \end{pmatrix} \quad (2.6.16)$$

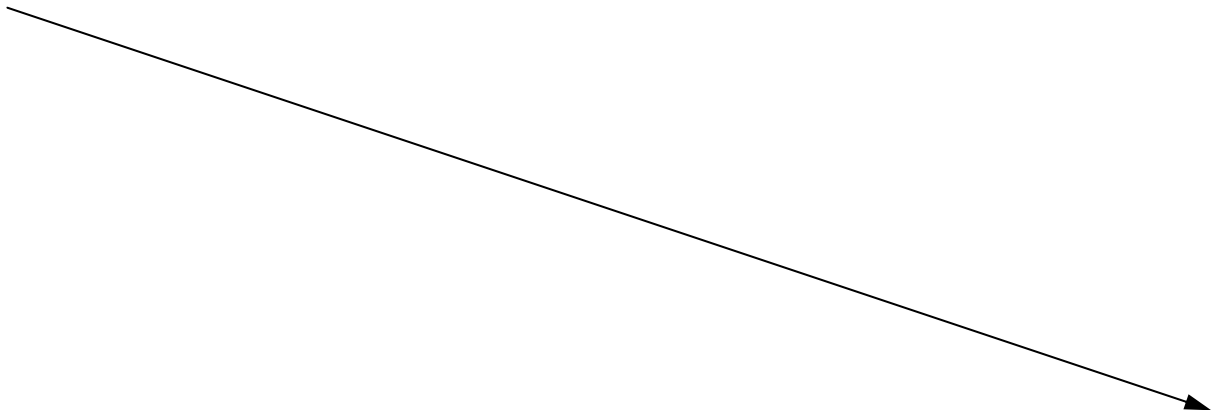
Page 87

The statement

This DE is nonlinear. Deriving its sensitivity matrix $A(\bar{\mathbf{X}}(t_n))$ using (2.6.13) we obtain

should read as follows:

This DE is nonlinear. Deriving its sensitivity matrix $A(\bar{\mathbf{X}}(t_n))$ using (2.6.13) we obtain (see Problem 3.10)



Page 87

Equation (2.6.37) currently reads as follows:

$$D \begin{pmatrix} \boldsymbol{\delta}x(t) \\ \boldsymbol{\delta}\dot{x}(t) \\ \boldsymbol{\delta}\omega \end{pmatrix} = A(\boldsymbol{X}(t)) \begin{pmatrix} \boldsymbol{\delta}x(t) \\ \boldsymbol{\delta}\dot{x}(t) \\ \boldsymbol{\delta}\omega \end{pmatrix} \quad (2.6.37)$$

The six δ 's should not be bold, and so the equation should read as follows:

$$D \begin{pmatrix} \delta x(t) \\ \delta \dot{x}(t) \\ \delta \omega \end{pmatrix} = A(\boldsymbol{X}(t)) \begin{pmatrix} \delta x(t) \\ \delta \dot{x}(t) \\ \delta \omega \end{pmatrix} \quad (2.6.37)$$

Page 90

Equation (2.6.45) currently reads as follows:

$$\boldsymbol{\delta}X(t) \equiv (\boldsymbol{\delta}x_1(t), \boldsymbol{\delta}x_2(t), \boldsymbol{\delta}x_3(t), \boldsymbol{\delta}x_4(t), \boldsymbol{\delta}x_5(t), \boldsymbol{\delta}x_6(t))^T \quad (2.6.45)$$

The six δ 's on the right-hand side of the equation should not be bold, and so the equation should read as follows:

$$\boldsymbol{\delta}X(t) \equiv (\delta x_1(t), \delta x_2(t), \delta x_3(t), \delta x_4(t), \delta x_5(t), \delta x_6(t))^T \quad (2.6.45)$$

Page 97

Equation (A2.2.10) currently reads as follows:

$$\boldsymbol{Z}_n \equiv (x, \tau \dot{x}, \tau^2/2! \ddot{x}, \dots, \tau^m/m! D^m x)_n^T \quad (A2.2.10)$$

The 2 should not be bold, and so the equation should read as follows:

$$\boldsymbol{Z}_n \equiv (x, \tau \dot{x}, \tau^2/2! \ddot{x}, \dots, \tau^m/m! D^m x)_n^T \quad (A2.2.10)$$

Page 101

Equation (A2.4.4) currently reads as follows:

$$D \begin{pmatrix} \delta x_1 \\ \delta x_2 \end{pmatrix} = \begin{pmatrix} f_1(x_1 + \delta x_1, x_2 + \delta x_2) \\ f_2(x_1 + \delta x_1, x_2 + \delta x_2) \end{pmatrix} - \begin{pmatrix} f_1(x_1, x_2) \\ f_2(x_1, x_2) \end{pmatrix} \quad (\text{A2.4.4})$$

The six δ 's should not be bold, and so the equation should read as follows:

$$D \begin{pmatrix} \delta x_1 \\ \delta x_2 \end{pmatrix} = \begin{pmatrix} f_1(x_1 + \delta x_1, x_2 + \delta x_2) \\ f_2(x_1 + \delta x_1, x_2 + \delta x_2) \end{pmatrix} - \begin{pmatrix} f_1(x_1, x_2) \\ f_2(x_1, x_2) \end{pmatrix} \quad (\text{A2.4.4})$$

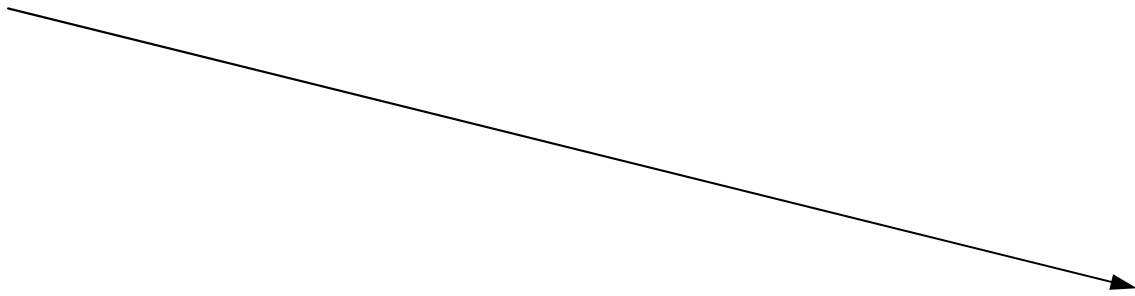
Page 101

Equation (A2.4.5) currently reads as follows:

$$D \begin{pmatrix} \delta x_1(t) \\ \delta x_2(t) \end{pmatrix} = \begin{pmatrix} D_{x_1} f_1(x_1(t), x_2(t)) & D_{x_2} f_1(x_1(t), x_2(t)) \\ D_{x_1} f_2(x_1(t), x_2(t)) & D_{x_2} f_2(x_1(t), x_2(t)) \end{pmatrix}_{\mathbf{x}(t)} \begin{pmatrix} \delta x_1(t) \\ \delta x_2(t) \end{pmatrix} \quad (\text{A2.4.5})$$

The four δ 's should not be bold, and so the equation should read as follows:

$$D \begin{pmatrix} \delta x_1(t) \\ \delta x_2(t) \end{pmatrix} = \begin{pmatrix} D_{x_1} f_1(x_1(t), x_2(t)) & D_{x_2} f_1(x_1(t), x_2(t)) \\ D_{x_1} f_2(x_1(t), x_2(t)) & D_{x_2} f_2(x_1(t), x_2(t)) \end{pmatrix}_{\mathbf{x}(t)} \begin{pmatrix} \delta x_1(t) \\ \delta x_2(t) \end{pmatrix} \quad (\text{A2.4.5})$$



Page 102

The statement

We refer you to Problems 2.24 and 2.25 where we ask you to apply the above.

should read as follows:

We refer you to Problems 2.18, 2.19, 2.20, 2.23, 2.24 where we ask you to apply the above.

Chapter 3

Page 124

Equation (3.3.33) currently reads as follows:

$$\begin{pmatrix} \delta Y_n \\ \delta Y_{n-1} \\ \vdots \\ \delta Y_{n-L} \end{pmatrix} = \begin{pmatrix} M(\bar{X}_n)\delta X_n \\ M(\bar{X}_{n-1})\Phi(t_{n-1}, t_n; \bar{X})\delta \bar{X}_n \\ \vdots \\ M(\bar{X}_{n-L})\Phi(t_{n-L}, t_n; \bar{X})\delta \bar{X}_n \end{pmatrix} + \begin{pmatrix} N_n \\ N_{n-1} \\ \vdots \\ N_{n-L} \end{pmatrix} \quad (3.3.33)$$

There should not be bars over the δX_n in two places just to the left of the *plus* sign. The equation should therefore read as follows:

$$\begin{pmatrix} \delta Y_n \\ \delta Y_{n-1} \\ \vdots \\ \delta Y_{n-L} \end{pmatrix} = \begin{pmatrix} M(\bar{X}_n)\delta X_n \\ M(\bar{X}_{n-1})\Phi(t_{n-1}, t_n; \bar{X})\delta X_n \\ \vdots \\ M(\bar{X}_{n-L})\Phi(t_{n-L}, t_n; \bar{X})\delta X_n \end{pmatrix} + \begin{pmatrix} N_n \\ N_{n-1} \\ \vdots \\ N_{n-L} \end{pmatrix} \quad (3.3.33)$$

Chapter 4

Page 170

Equation (A4.1.5) and the line that follows it currently read as follows:

$$\begin{aligned} z &= r_{1,1}x^2 + 2r_{1,2}x(mx) + r_{2,2}(mx)^2 \\ &= (r_{1,1} + 2mr_{1,2} + m^2r_{2,2})x^2 = kx^2 \end{aligned} \tag{A4.1.5}$$

in which k is positive (because $z > 0$).

The k should be b , and so (A4.1.5) and the line that follows it should read as follows:

$$\begin{aligned} z &= r_{1,1}x^2 + 2r_{1,2}x(mx) + r_{2,2}(mx)^2 \\ &= (r_{1,1} + 2mr_{1,2} + m^2r_{2,2})x^2 = bx^2 \end{aligned} \tag{A4.1.5}$$

in which b is positive (because $z > 0$).

Page 171

The statements

Using this in (A4.1.5) gives

$$z = Ax^2 = (k/(1+m^2))\|c\|^2 = k(m)\|c\|^2 \tag{A4.1.8}$$

This means that there exists a positive constant $k(m) \equiv A/(1+m^2)$ that is independent of $\|c\|$

should read as follows:

Using this in (A4.1.5) gives

$$z = bx^2 = (b/(1+m^2))\|c\|^2 = k(m)\|c\|^2 \tag{A4.1.8}$$

This means that there exists a positive constant $k(m) \equiv b/(1+m^2)$ that is independent of $\|c\|$

Chapter 7

Page 232

The statement

(see Project 10.9)

should read as follows:

(see Project 10.6)

Page 235

The statement

Let the state vector of the observed trajectory be the m -vector X .

should read as follows:

Let the true state vector of the observed trajectory be the m -vector X .

Chapter 8

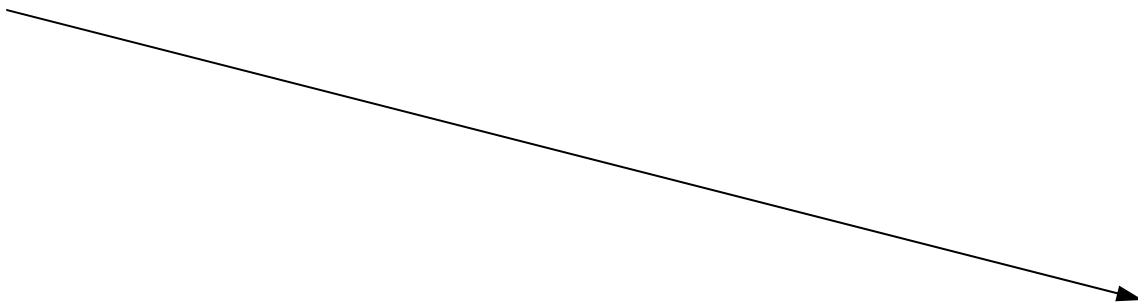
Page 257

The statement

and also that Version 2 avoids two of the seven matrix multiplications

should read as follows:

and also that Version 2 avoids two of the six matrix multiplications



Page 267

The statement

We assume for simplicity that the observations y_1, y_2, \dots, y_n are uncorrelated and that the variances of their errors are respectively r_1, r_2, \dots, r_n . Then the covariance matrix of the long-vector \mathbf{Y}_n will be the diagonal matrix $\mathbf{R}_{\mathbf{Y}_n} = \text{diag}(r_1, r_2, \dots, r_n)$.

should read as follows:

We assume for simplicity that the observations y_n, y_{n-1}, \dots, y_1 are uncorrelated and that the variances of their errors are respectively r_n, r_{n-1}, \dots, r_1 . Then the covariance matrix of the long-vector \mathbf{Y}_n will be the diagonal matrix $\mathbf{R}_{\mathbf{Y}_n} = \text{diag}(r_n, r_{n-1}, \dots, r_1)$.

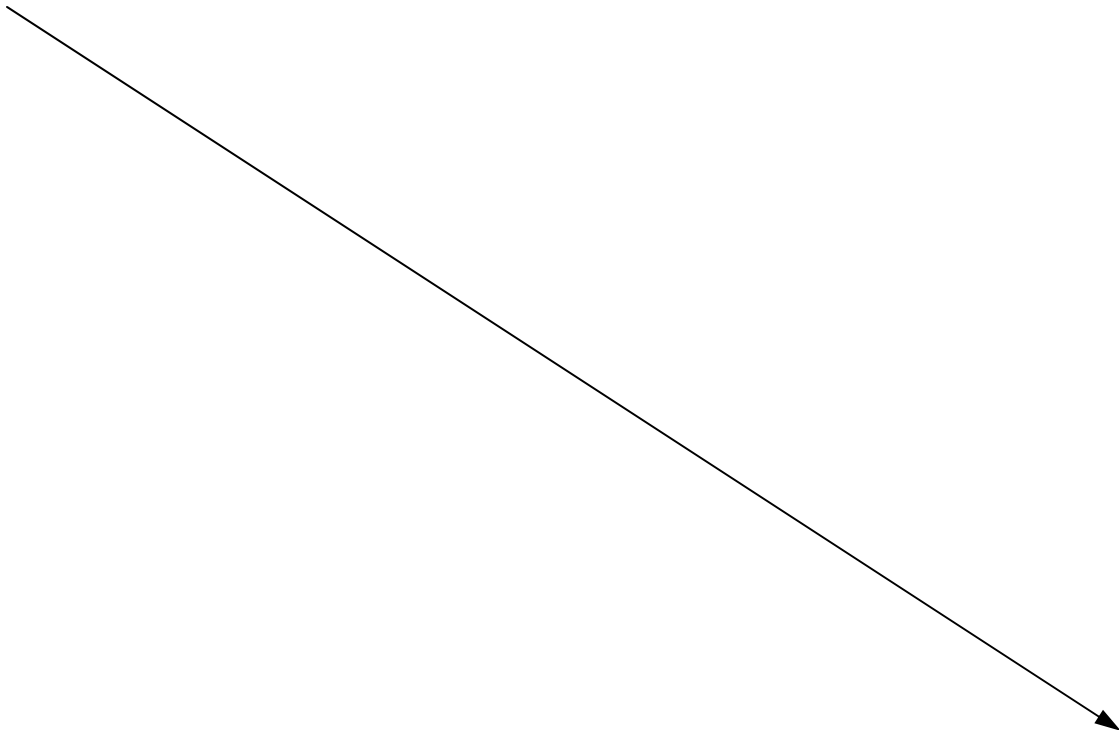
Page 267

Equation (8.5.7) currently reads as follows:

$$\mathbf{R}_{\mathbf{Y}_n}^{-1} = \text{diag}(1/r_1, 1/r_2, 1/r_3, 1/r_4, 1/r_5)_n^T \quad (8.5.7)$$

It should read as follows:

$$\mathbf{R}_{\mathbf{Y}_n}^{-1} = \text{diag}(1/r_n, 1/r_{n-1}, 1/r_{n-2}, 1/r_{n-3}, 1/r_{n-4})^T \quad (8.5.7)$$



Page 268

Equation (8.5.11) currently reads as follows:

$$\begin{aligned} \mathbf{T}_2^T \mathbf{R}_{\mathbf{Y}_2}^{-1} \mathbf{T}_2 &= \begin{pmatrix} 1 & 1 \\ 0 & t_1 - t_2 \end{pmatrix} \begin{pmatrix} 1/r_1 & 0 \\ 0 & 1/r_2 \end{pmatrix} \begin{pmatrix} 1 & 0 \\ 1 & t_1 - t_2 \end{pmatrix} \\ &= \begin{pmatrix} 1/r_1 + 1/r_2 & (t_1 - t_2)/r_2 \\ (t_1 - t_2)/r_2 & (t_1 - t_2)^2/r_2 \end{pmatrix} \end{aligned} \quad (8.5.11)$$

It should read as follows:

$$\begin{aligned} \mathbf{T}_2^T \mathbf{R}_{\mathbf{Y}_2}^{-1} \mathbf{T}_2 &= \begin{pmatrix} 1 & 1 \\ 0 & t_1 - t_2 \end{pmatrix} \begin{pmatrix} 1/r_2 & 0 \\ 0 & 1/r_1 \end{pmatrix} \begin{pmatrix} 1 & 0 \\ 1 & t_1 - t_2 \end{pmatrix} \\ &= \begin{pmatrix} 1/r_2 + 1/r_1 & (t_1 - t_2)/r_1 \\ (t_1 - t_2)/r_1 & (t_1 - t_2)^2/r_1 \end{pmatrix} \end{aligned} \quad (8.5.11)$$

Page 268

The sentence

- ◇ At time t_2 the filter is cycled, using as the inputs $\mathbf{Y}_2 = (y_1, y_2)^T$ and the matrix $\mathbf{R}_{\mathbf{Y}_2} = \text{diag}(r_1, r_2)$. The outputs will be $\mathbf{X}^*_{2,2}$ and $\mathbf{S}^*_{2,2}$.

should read as follows:

- ◇ At time t_2 the filter is cycled, using as the inputs $\mathbf{Y}_2 = (y_2, y_1)^T$ and the matrix $\mathbf{R}_{\mathbf{Y}_2} = \text{diag}(r_2, r_1)$. The outputs will be $\mathbf{X}^*_{2,2}$ and $\mathbf{S}^*_{2,2}$.

Page 268

The sentence

- ◇ At time t_3 the filter is cycled, using as the inputs $\mathbf{Y}_3 = (y_1, y_2, y_3)^T$ and the matrix $\mathbf{R}_{\mathbf{Y}_3} = \text{diag}(r_1, r_2, r_3)$. The outputs will be $\mathbf{X}^*_{3,3}$ and $\mathbf{S}^*_{3,3}$.

should read as follows:

- ◇ At time t_3 the filter is cycled, using as the inputs $\mathbf{Y}_3 = (y_3, y_2, y_1)^T$ and the matrix $\mathbf{R}_{\mathbf{Y}_3} = \text{diag}(r_3, r_2, r_1)$. The outputs will be $\mathbf{X}^*_{3,3}$ and $\mathbf{S}^*_{3,3}$.

Page 268

The sentence

- ◇ At time t_4 the filter is cycled using $\mathbf{Y}_4 = (y_1, y_2, y_3, y_4)^T$ and $\mathbf{R}_{\mathbf{Y}_4} = \text{diag}(r_1, r_2, r_3, r_4)$. The outputs will be $\mathbf{X}^*_{4,4}$ and $\mathbf{S}^*_{4,4}$ and so on.

should read as follows:

- ◇ At time t_4 the filter is cycled using $\mathbf{Y}_4 = (y_4, y_2, y_2, y_1)^T$ and $\mathbf{R}_{\mathbf{Y}_4} = \text{diag}(r_4, r_3, r_2, r_1)$. The outputs will be $\mathbf{X}^*_{4,4}$ and $\mathbf{S}^*_{4,4}$ and so on.

Page 271

The sentence

As noted earlier, Version 2 of the MVA requires five matrix multiplications whereas Version 1 requires seven, and so, all else being equal, we would use Version 2.

should read as follows:

As noted earlier, Version 2 of the MVA requires four matrix multiplications whereas Version 1 requires six, and so, all else being equal, we would use Version 2.

Chapter 9

Page 320

In Appendix 9.3, equation (A9.3.2) currently reads as follows:

$$L = (2\pi)^{-k/2} | \mathbf{R} |^{-1/2} \exp(-\frac{1}{2}(\mathbf{Y} - \mathbf{TX}^*)^T \mathbf{R}_Y^{-1} (\mathbf{Y} - \mathbf{TX}^*)) \quad (\text{A9.3.2})$$

The equation should read as follows:

$$L = (2\pi)^{-k/2} | \mathbf{R}_Y |^{-1/2} \exp(-\frac{1}{2}(\mathbf{Y} - \mathbf{TX}^*)^T \mathbf{R}_Y^{-1} (\mathbf{Y} - \mathbf{TX}^*)) \quad (\text{A9.3.2})$$

Chapter 10

Page 339

The statement

Video_Clips\TWS\Flights

should read as follows:

Part_2\Video_Clips_TWS\Flights

Page 339

The statement

Video_Clips\TWS\Documents\Readme

should read as follows:

Part_2\Video_Clips_TWS\Documents\Readme

Page 344

The statement

These are then transformed to Cartesian coordinates and fed to three filters – Kalman, Swerling and Gauss-Newton

should read as follows:

These are then transformed to Cartesian coordinates and, after prefiltering, are fed to three filters – Kalman, Swerling and Gauss-Newton

Page 349

The statement

the values X^*_{max} , S^*_{max} and SSR^*_{max} have been placed in storage

should read as follows:

the values X^*_{max} , S^*_{max} and SSR_{max} have been placed in storage

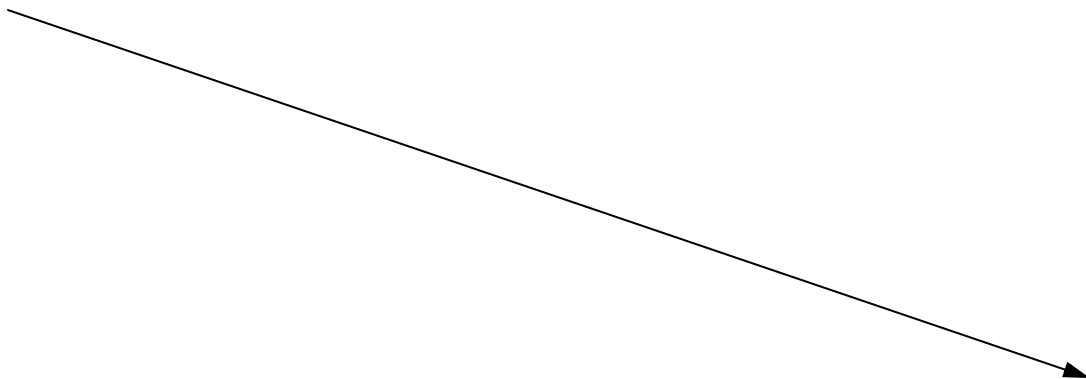
Page 351

The statement

In (A10.1.5) we show the values for $N_{X^*_3}$, $N_{X^*_4}$ and $N_{X^*_5}$.

should read as follows:

In (A10.1.4) we show the values for $N_{X^*_3}$, $N_{X^*_4}$ and $N_{X^*_5}$.



Chapter 11

Page 387

The first paragraph currently reads as follows:

As an example, we see from Figure A11.16.3 that when $N = 1600$, on average the Gauss–Newton \hat{x} , \hat{y} and \hat{z} estimates are *100* times more accurate than those of Kalman.

The paragraph should read as follows:

As an example, we see from Figure A11.4.3 that when $N = 1600$, on average the Gauss–Newton \hat{x} , \hat{y} and \hat{z} estimates are *100* times more accurate than those of Kalman.

Chapter 12

Page 420

In Figure 12.21(b) the expression

$$20(1 - \theta)^7/\tau^2(1 + \theta)^7$$

The item τ^2 is incorrect. The expression should read as follows:

$$20(1 - \theta)^7/\tau^6(1 + \theta)^7$$

Page 420

In Figure 12.21(b) the expression

$$\frac{5(449\theta^6 + 2988\theta^5 + 10013\theta^4 + 21216\theta^3 + 28923\theta^2 + 25588\theta + 12199)(1 - \theta)^3}{72\tau^2(1 + \theta)^9}$$

should be as follows:

$$\frac{5(449\theta^6 + 2988\theta^5 + 10013\theta^4 + 21216\theta^3 + 28923\theta^2 + 25588\theta + 12199)(1 - \theta)^3}{72\tau^2(1 + \theta)^9}$$

Page 423

Equation (12.2.56) now reads

$$\mathbf{VRF}(X_{n+1,n}^*) = \begin{pmatrix} 1.25(1-\theta) & 6(1-\theta)^2/\tau \\ 6(1-\theta)^2/\tau & 12(1-\theta)^3/\tau^2 \end{pmatrix} \quad (12.2.56)$$

It should read as follows:

$$\mathbf{VRF}(X_{n+1,n}^*) = \begin{pmatrix} 1.25(1-\theta) & 0.5(1-\theta)^2/\tau \\ 0.5(1-\theta)^2/\tau & 0.25(1-\theta)^3/\tau^2 \end{pmatrix} \quad (12.2.56)$$

Page 423

Equation (12.2.57) now reads

$$\mathbf{VRF}(X_{n+1,n}^*) = \begin{pmatrix} 2.0625(1-\theta) & 1.6875(1-\theta)^2/\tau & 0.5(1-\theta)^3/\tau^2 \\ 1.6875(1-\theta)^2/\tau & 1.75(1-\theta)^3/\tau^2 & 0.5625(1-\theta)^4/\tau^3 \\ 0.5(1-\theta)^3/\tau^2 & 0.5625(1-\theta)^4/\tau^3 & 1.1875(1-\theta)^5/\tau^4 \end{pmatrix} \quad (12.2.57)$$

The coefficient *1.1875* is incorrect. The equation should read as follows:

$$\mathbf{VRF}(X_{n+1,n}^*) = \begin{pmatrix} 2.0625(1-\theta) & 1.6875(1-\theta)^2/\tau & 0.5(1-\theta)^3/\tau^2 \\ 1.6875(1-\theta)^2/\tau & 1.75(1-\theta)^3/\tau^2 & 0.5625(1-\theta)^4/\tau^3 \\ 0.5(1-\theta)^3/\tau^2 & 0.5625(1-\theta)^4/\tau^3 & 0.1875(1-\theta)^5/\tau^4 \end{pmatrix} \quad (12.2.57)$$

Page 423

The second equation in (12.2.58) now reads

$$\sigma(x_{l^*_{n+1}, n}) = 1.5 ((13\theta^2 + 50\theta + 49)(1 - \theta)^3 2\tau^2 (1 + \theta)^5)^{1/2} \approx 0.57 \text{m/sec} \quad (12.2.58)$$

The division slash is missing before the 2. The equation should read as follows:

$$\sigma(x_{l^*_{n+1}, n}) = 1.5 ((13\theta^2 + 50\theta + 49)(1 - \theta)^3 / 2\tau^2 (1 + \theta)^5)^{1/2} \approx 0.57 \text{m/sec} \quad (12.2.58)$$

Page 455

The statement

"... we are approximating the orbit by..."

should read as follows:

"... we are approximating the orbits by..."

Chapter 13

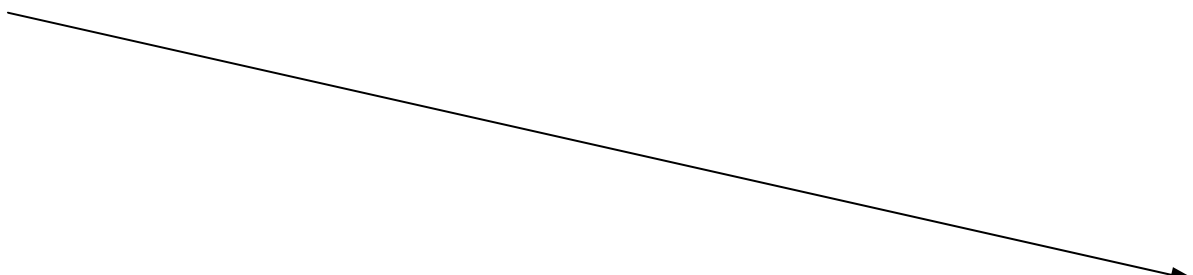
Page 474

Equation (13.1.9) currently reads as follows:

$$(c_j(n))^2 \equiv \sum_{s=0}^n (p_i(s, n))^2 \quad (13.1.9)$$

The term p_i on the right should be p_j . The equation should therefore read as follows:

$$(c_j(n))^2 \equiv \sum_{s=0}^n (p_j(s, n))^2 \quad (13.1.9)$$



Page 490

Equation (13.2.29) currently reads as follows:

$$(\mathbf{C}(n))^2 = \begin{pmatrix} 1/c_0(n)^2 & 0 \\ 0 & 1/c_0(n)^2 \end{pmatrix} = \begin{pmatrix} 1/(n+1) & 0 \\ 0 & 3n/(n+2)(n+1) \end{pmatrix} \quad (13.2.29)$$

The second term in the first matrix should be $1/c_1(n)^2$. The equation should therefore read as follows:

$$(\mathbf{C}(n))^2 = \begin{pmatrix} 1/c_0(n)^2 & 0 \\ 0 & 1/c_1(n)^2 \end{pmatrix} = \begin{pmatrix} 1/(n+1) & 0 \\ 0 & 3n/(n+2)(n+1) \end{pmatrix} \quad (13.2.29)$$

Page 491

The statement

The matrix $\mathbf{D}(\tau)$ was defined in (11.2.1).

should read as follows:

The matrix $\mathbf{D}(\tau)$ was defined in (12.2.11).

Page 491

The statement

See Project 12.2 in the supplementary material for comments regarding denormalization in the computer programs.

should read as follows:

See Projects 12.2 and 13.3 in the supplementary material for comments regarding denormalization in the computer programs.

Page 492

The statement

When $m = 0$ or 1 it is possible to form these expansions by hand
 should read as follows:

When $m = 0$ or 1 it is possible to form these expansions by hand

Page 492

The statement

where $\Phi(I)$ is the transition matrix defined in (2.3.17)
 should read as follows:

where $\Phi(I)$ is the transition matrix defined in (2.3.14)

Page 492

Equation (13.2.39) currently reads as follows:

$$S^*(X_{n+1, n}^*) = \Phi(\tau) S^*(X_{n+1, n}^*) \Phi(\tau)^T \quad (13.2.39)$$

The equation should read as follows:

$$S^*(X_{n+1, n}^*) = \Phi(\tau) S^*(X_{n, n}^*) \Phi(\tau)^T \quad (13.2.39)$$

Page 504

Equation (13.3.38) currently reads as follows:

$$z_i^*{}_{n-s, n} = \sum_{j=0}^m (-1)^j / i \, d^j / ds^j \varphi_j(s, \theta) \Big|_{s=-1} \left[\sum_{k=0}^{\infty} \varphi_j(k, \theta) \theta^k y_{n-k} \right] \quad 0 \leq i \leq m \quad (13.3.38)$$

A factorial symbol is missing after $/i$. The equation should read as follows:

$$z_i^*{}_{n-s, n} = \sum_{j=0}^m (-1)^j / i! \, d^j / ds^j \varphi_j(s, \theta) \Big|_{s=-1} \left[\sum_{k=0}^{\infty} \varphi_j(k, \theta) \theta^k y_{n-k} \right] \quad 0 \leq i \leq m \quad (13.3.38)$$

Page 505

Equation (13.3.40) currently reads as follows:

$$[\mathbf{L}(\theta)]_j \equiv \theta^j / c(j, \theta) \quad 0 \leq i, j \leq m \quad (13.3.40)$$

The term $c(j, \theta)$ is squared, and so the equation should read as follows:

$$[\mathbf{L}(\theta)]_j \equiv \theta^j / (c(j, \theta))^2 \quad 0 \leq i, j \leq m \quad (13.3.40)$$

Page 512

The heading currently reads as follows:

3. The matrix $[\mathbf{P}(n,n)]_{i,j} = 1/i! \left. d^i/ds^i (p_j(s,n)) \right|_{s=n} \quad 0 \leq i, j \leq 4$

There is an extra bracket present before the p_j . It should read as follows:

3. The matrix $[\mathbf{P}(n,n)]_{i,j} = 1/i! \left. d^i/ds^i p_j(s,n) \right|_{s=n} \quad 0 \leq i, j \leq 4$

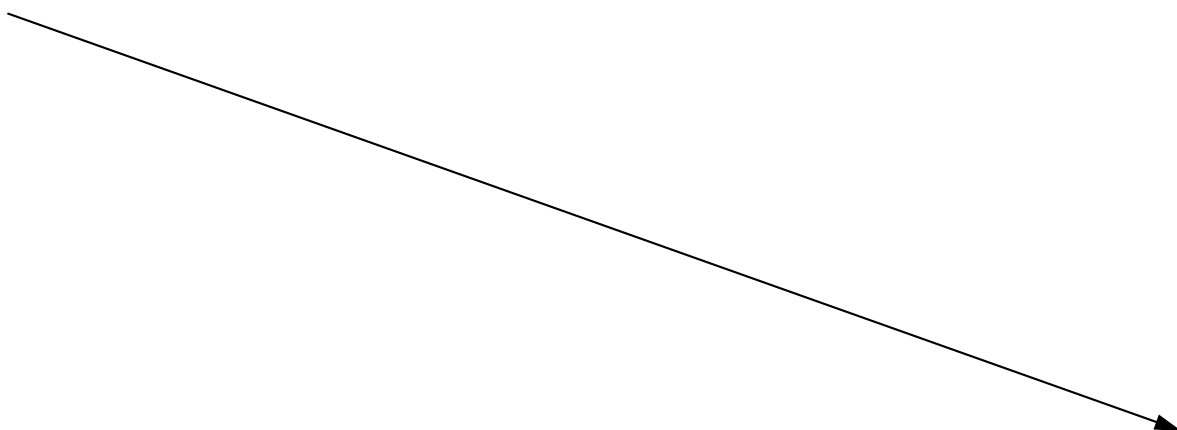
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In Appendix 13.5, in the first row of the matrix the second term currently reads as follows:

$$\theta^2(1 - bs)$$

The term should read as follows:

$$\theta(1 - bs)$$



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In Appendix 13.5, in the first row of the matrix the fourth term currently reads as follows:

$$-\theta^3(1 - 3bs + 3b^2(s^2-s)/2 - b^3(s^3-3s^2+2s)/6)$$

There should not be a minus sign before the θ^3 . The term should read as follows:

$$\theta^3(1 - 3bs + 3b^2(s^2-s)/2 - b^3(s^3-3s^2+2s)/6)$$