**Errors and misprints in:**
*Introduction to Mathematical Systems Theory, Linear Systems, Identification and Control,*
by Christiaan Heij, André Ran and Freek van Schagen.

### Chapter 4

Page 47, line 5. $SB$ should be $S^{-1}B$.

### Chapter 5

In Theorem 5.3.2, part ii, it is stated that $K_+$ is the unique positive semidefinite solution of the algebraic Riccati equation (5.16). This is false, as easy examples show. Part ii of the Theorem should read as follows:

*$K_+$ satisfies the algebraic Riccati equation*

$$K = Q + A^T K A - (A^T K B + S^T)(R + B^T K B)^{-1}(B^T K A + S). \qquad (5.16)$$

*Moreover, it is the largest hermitian solution of* (5.16)*, in the sense that $K_+ - K$ is positive semidefinite for all hermitian solutions $K$, and it is also the unique solution for which $A - B(R + B^T K B)^{-1}(B^T K A + S)$ is a stable matrix. Furthermore, $K_+$ is positive semidefinite. If, in addition, the pair $(A - BR^{-1}S, Q - S^T R^{-1} S)$ is observable, then $K_+$ is positive definite.*

Since later on in the book, in Chapter 7, there is a reference to this theorem, there too things have to be changed.

### Chapter 6

Page 77, line 4 reads: "It follows that $\det(zI - A) = z^m \det \hat{A}(z)$". This should be $\det(zI - A) = \det z^m \hat{A}(z)$.

### Chapter 7

Page 91, 4 lines from below. At the end of this line should be added $\omega(t)$.
Page 94, line 4. The letter "bigl" should be removed.

Page 97, part ii of Theorem 7.4.2. This should read:

*$P$ is the largest hermitian solution of the algebraic Riccati equation*

$$P = APA^T + FF^T - (GF^T + CPA^T)^T (GG^T + CPC^T)^{-1} (GF^T + CPA^T) \quad (7.22)$$

*Moreover, $P$ is positive semidefinite.*

Page 99, line 7. $\hat{X}$ should be $\hat{x}$.
Page 99, line 11 from below. At the end of the line (7.23) should be replaced by (7.26).

**Chapter 10**

In Theorem 10.1.1, on page 134, the formula for $\hat{\beta}_k$ should read

$$\hat{\beta}_k = \frac{2}{N} \sum_{t=1}^{N} y(t) \cos(\omega_k t)$$

(there is a letter $w$ where there should be $\omega$).

**Errors in the exercises.**

The data for the exercise 9 are not where you think they are on the CD-Rom! The data for the exercises for chapter 10 are in the two files exercise_9.m and exercise_10.m, respectively. To generate the time series needed for the exercise 9, use the file exercise_7.m. This will generate a time series Y, which should be used in the exercise 9.