

Corrections to “Time Series Analysis by State Space Methods” by J. Durbin and S.J. Koopman

36 corrections are listed below, p. and l. indicate page and line numbers (negative numbers should be counted from the bottom), \rightarrow indicates “should read”.

1. p. xii, l. 11: 36 \rightarrow 37

2. p. 46, l. 18, eq. (3.14): $\sigma^2 \rightarrow \sigma_\xi^2$

3. p. 51, l. 2: correlations \rightarrow autocorrelations

4. p. 60, l. -8: (3.37) \rightarrow (3.38)

5. p. 74, l. -11. below eq. (4.37): variable \rightarrow vector

6. p. 117, l. 7, eq. (5.42):

$$[(a_{a,t+1} - \alpha_{t+1} + A_{A,t+1}\delta)(a_{a,t+1} - \alpha_{t+1} + A_{A,t+1}\delta)']$$

\rightarrow

$$[\{a_{\delta,t+1} - \alpha_{t+1} - A_{A,t+1}(\delta - \bar{\delta}_t)\}\{a_{\delta,t+1} - \alpha_{t+1} - A_{A,t+1}(\delta - \bar{\delta}_t)\}']$$

7. p. 117, l. 8, eq. (5.42): $P_{\delta,t+1} - A_{A,t+1} \rightarrow P_{\delta,t+1} + A_{A,t+1}$

8. p. 117, l. 9, eq. (5.42): $P_{\delta,t+1} - A_{A,t+1} \rightarrow P_{\delta,t+1} + A_{A,t+1}$

9. p. 117, l. 10: by standard regression theory since \rightarrow since

10. p. 117, l. 17, eq. (5.46): $P_{\delta,t+1} - A_{A,t+1} \rightarrow P_{\delta,t+1} + A_{A,t+1}$

11. p. 118, l. -11: $A_1 \rightarrow A_{A,1}$

12. p. 118, l. -6:

$$\begin{pmatrix} y_1 \\ 0 \end{pmatrix} \rightarrow -\frac{1}{\sigma_\varepsilon^2} \begin{pmatrix} y_1 \\ 0 \end{pmatrix}$$

13. p. 118, l. -6:

$$\begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix} \rightarrow \frac{1}{\sigma_\varepsilon^2} \begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix}$$

14. p. 118, l. -4: $A_2 \rightarrow A_{A,2}$

15. p. 118, l. -1:

$$\frac{1}{1+q_\xi} \begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix} \rightarrow \begin{bmatrix} \frac{1}{1+q_\xi} & 1 \\ 0 & 1 \end{bmatrix}$$

16. p. 119, l. 2:

$$b_2 = \frac{1}{1+q_\xi} \rightarrow b_2 = \frac{-1}{1+q_\xi}$$

17. p. 119, l. 2:

$$S_{A,2} = \frac{1}{1+q_\xi} \rightarrow S_{A,2} = \frac{1}{\sigma_\varepsilon^2(1+q_\xi)}$$

18. p. 119, l. 4: $A_3 \rightarrow A_{A,3}$

19. p. 119, l. 6: $\begin{bmatrix} 1 \\ -1 \end{bmatrix} \rightarrow \sigma_\varepsilon^2 \begin{bmatrix} 1 \\ -1 \end{bmatrix}$

20. p. 119, l. 6: $\hat{\delta}_2 \rightarrow \bar{\delta}_2$

21. p. 119, l. 6:

$$\begin{pmatrix} -y_1 \\ y_1 - y_2 \end{pmatrix} \rightarrow \begin{pmatrix} y_1 \\ y_2 - y_1 \end{pmatrix}$$

22. p. 119, l. 8: $A_3 \rightarrow A_{A,3}$

23. p. 119, l. 8: $\hat{\delta}_2 \rightarrow \bar{\delta}_2$

24. p. 119, l. 9: $A_3 \rightarrow A_{A,3}$

25. p. 119, l. 9: $A'_3 \rightarrow A'_{A,3}$

26. p. 137, l. 11: 1850 \rightarrow 1950

27. p. 145, l. 6:

$$\text{tr}\{ \rightarrow \text{tr}[\{$$

28. p. 145, l. 6:

$$H_t^{-1} \rightarrow H_t^{-1}]$$

29. p. 145, l. 7:

$$\text{tr}\{ \rightarrow \text{tr}[\{$$

30. p. 145, l. 7:

$$Q_{t-1}^{-1} \rightarrow Q_{t-1}^{-1}]$$

31. p. 147, l. -2:

$$\text{tr}\{ \rightarrow \text{tr}[\{$$

32. p. 147, l. -2:

$$H_t^{-1} \rightarrow H_t^{-1}]$$

33. p. 147, l. -1:

$$\text{tr}\{ \rightarrow \text{tr}[\{$$

34. p. 147, l. -1:

$$Q_{t-1}^{-1} \rightarrow Q_{t-1}^{-1}]$$

35. p. 180, l. -9:

$$\left\{ \frac{\partial \log p(y_t | \theta_t)}{\partial \theta_t} \right\}^2 \rightarrow \frac{\partial \log p(y_t | \theta_t)}{\partial \theta_t} \frac{\partial \log p(y_t | \theta_t)}{\partial \theta'_t}$$

36. p. 242, l. -1: nonlinear estimating equations \rightarrow nonlinear state space time series models