

## SIMIODE v1.12 Text Errata

January 24, 2023

- In Exercise 3.4.2, the phrase “plot the linear function  $-k^* \ln(t)$ ” should be “plot the linear function  $-k^*t$ .”
- In Section 7.3, partial derivatives and Jacobian in Example 7.6 (page 366) are slightly wrong. The partial derivatives should be

$$\frac{\partial f_1}{\partial u_1} = 1 - u_1 - u_2/10, \quad \frac{\partial f_1}{\partial u_2} = -u_1/10, \quad \frac{\partial f_2}{\partial u_1} = -3u_2/10, \quad \frac{\partial f_2}{\partial u_2} = 2 - 4u_2/3 - 3u_1/10.$$

The Jacobian matrix should be

$$\mathbf{J}(u_1, u_2) = \begin{bmatrix} 1 - u_1 - u_2/10 & -u_1/10 \\ -3u_2/10 & 2 - 4u_2/3 - 3u_1/10 \end{bmatrix}.$$

All following computations are correct, though.

- In Section 7.4, problem 7.4.5 part (e), the Jacobian should be  $\mathbf{J}(\pi, 0)$ , and the conclusions on stability should be made at  $(\pi, 0)$ .
- In Section 7.6, Example 7.24 (page 410) has wrong entries in the matrices associated to  $D_1$ ,  $D_2$ , and  $D_3$ , though  $D_1$ ,  $D_2$ , and  $D_3$  are themselves correct. It should read

$$\begin{aligned} D_1 &= \det [r] = r, \\ D_2 &= \det \begin{bmatrix} r & 1 \\ 5 & 9 \end{bmatrix} = 9r - 5, \\ D_3 &= \det \begin{bmatrix} r & 1 & 0 \\ 5 & 9 & r \\ 0 & 0 & 5 \end{bmatrix} = 45r - 25. \end{aligned}$$

- In Section 8.3, Exercise 8.3.1, the reference should be to the sine expansion of  $f(x)$  (note the cosine).