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

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

All following computations are correct, though.

- In Section 7.4, problem 7.4.5 part (e), the Jacobian should be $J(\pi, 0)$, 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 read

$$D_1 = \det \begin{bmatrix} r \end{bmatrix} = r,$$

$$D_2 = \det \begin{bmatrix} r & 1 \\ 5 & 9 \end{bmatrix} = 9r - 5,$$

$$D_3 = \det \begin{bmatrix} r & 1 & 0 \\ 5 & 9 & r \\ 0 & 0 & 5 \end{bmatrix} = 45r - 25.$$ 

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