

Errata for
Introduction to Dynamical Systems: Discrete and Continuous, 2nd edition

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Published by American Mathematics Society, 2012

p. 99 L. 18: $\tau < \min \left\{ \frac{r}{K}, \frac{1}{L} \right\}$

p. 148 L -4:

$$D\mathbf{F}_{(\mathbf{x}^*)} = \frac{1}{1 + \alpha + \beta} \begin{pmatrix} -1 & -\alpha & -\beta \\ -\beta & -1 & -\alpha \\ -\alpha & -\beta & -1 \end{pmatrix}.$$

p.149 L 2:

$$\frac{1}{1 + \alpha + \beta} \left(-1 + \frac{\alpha + \beta}{2} \right) = \frac{\alpha + \beta - 2}{2(1 + \alpha + \beta)} > 0.$$

p. 149 L 1-2: (An alternative argument is as follows:) Once we know that two eigenvalues are complex pairs, then we can find their real parts as follows.

$$\begin{aligned} 2\operatorname{Re}(\lambda_2) &= \lambda_2 + \lambda_3 \\ \lambda_1 + \lambda_2 + \lambda_3 &= \operatorname{tr}(D\mathbf{F}_{(\mathbf{x}^*)}) = \frac{-3}{1 + \alpha + \beta} \\ 2\operatorname{Re}(\lambda_2) &= \frac{-3}{1 + \alpha + \beta} - (-1) \\ &= \frac{\alpha + \beta - 2}{1 + \alpha + \beta} \\ \operatorname{Re}(\lambda_2) = \operatorname{Re}(\lambda_3) &= \frac{\alpha + \beta - 2}{2(1 + \alpha + \beta)} > 0. \end{aligned}$$

p. 149 L -12: Therefore, any orbit with $S(0) > 0$ must enter and remain in the set where $S \leq 2$.

p. 149 L -3: strict Lyapunov function and any trajectory off diagonal must go to the minimum

p. 204 L 10: Since $\hat{\mathbf{S}}_I = \bigcup_{J \supset I} \mathbf{S}_J$,

p. 209 L 1: $f'_j(x_j) > 0$