

Errata

2nd Edition Ordinary Differential Equations and Applications, 2nd Ed.
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p. 24 After dividing by ϵ , we obtain the equation

$$\dot{\eta}(t, \epsilon) = Df(x_0)\eta(t, 0) + \epsilon R(t, \epsilon),$$

p. 30 After the first displayed formula, M must be replaced by $m/2$.

p. 52 Next display after formula 1.18, must read

$$(x, y, z) \mapsto (x(y + z), -y^2 + x \cos z, 2x + z - \sin y).$$

p. 57 After the first displayed formula, “defines a vector field on $W \subseteq \mathbb{R}^k$.”

p. 98 In the third paragraph A must be defined by $A := \{(v, \theta) : v_- \leq v \leq v_+\}$.

p. 131 In the first line of the proof of Theorem 1.249, “or $\|DF\|\rho + \|DG\| < \rho$.”

p. 181 In Ex. 2.74 the first differential equation should be $\dot{y} = F(t, y)$ and there is a right parenthesis missing at the end of the first formula in the Hint.

p. 184 The last displayed formula has a missing parenthesis. It should read

$$|\phi(\tau)| \leq \delta e^{-\alpha(\tau-t_0)} < \delta.$$

p. 187 In Exercise 2.81(a), $V : \mathbb{R}^n \times \mathbb{R}^n \rightarrow \mathbb{R}^n$.

- p. 193** Exercise 2.87 should read as follows: Suppose as usual that $A(t)$ is T -periodic and the Floquet normal form of the principle fundamental matrix solution of the system $\dot{x} = A(t)x$ at $t = 0$ is given by $P(t)e^{tB}$.
 (a) Prove that there exists an integer k such that

$$\operatorname{tr} B = \frac{1}{T} \int_0^T \operatorname{tr} A(t) dt + k \frac{2\pi i}{T}.$$

Hint: Use Liouville's formula. (b) Prove that the product of the characteristic multipliers is given by $\exp(\int_0^T \operatorname{tr} A(t) dt)$.

- p. 198** Last line of the proof for Theorem 2.96.

$$x_2(t) = (e^{\mu t} e^{2\pi k i t / T}) (e^{-2\pi k i t / T} P(t) v_2).$$

- p. 213** There are parentheses missing in the first displayed formula; it should read

$$\frac{d}{dt} f(u(t, \xi)) = Df(u(t, \xi)) u_t(t, \xi) = Df(u(t, \xi)) f(u(t, \xi)),$$

- p. 216** The third line of Corollary 2.127 must be $|Av|_a \leq \lambda|v|_a$.

- p. 324** Before display (4.1), $\zeta \in \mathbb{R}^\ell$.

- p. 350** In the first formula $<$ must be \leq . In the third formula line $\|S^{-1}\| \|A\| \leq$, and the same in the fifth formula line on p. 351. Also the formula

$$I - S^{-1}A = I + \sum_{\ell=1}^{\infty} (S^{-1}A)^\ell$$

must be changed to

$$(I - S^{-1}A)^{-1} = I + \sum_{\ell=1}^{\infty} (S^{-1}A)^\ell$$

- p. 352** The formula 1/3 down the page must be

$$\|p\|_1 < \frac{1}{2} \frac{\alpha}{1 + \alpha} (1 - \lambda)$$

- p. 352** In the proof of Theorem 4.6, α must be taken less than $1/\|A^{-1}\|$. This is needed to prove that F^* on page 353 is injective, a fact that is needed to prove that $H(A^\ell x) = H(A^\ell y)$ holds for $\ell < 0$.
- p. 411** In the next display following (5.61), the last y must be replaced by 0. On the next page, the first displayed formula should be

$$G_y(u, 0) = \int_0^1 t \tilde{F}_{yy}(u, 0) dt = \frac{1}{2} \tilde{F}_{yy}(u, 0).$$

- P. 416** In Ex. 5.40 take $v = 1$ corresponding to Γ , not $v = 0$.
- p. 561** Formula 8.6 should be $\Pi f(\Psi(p, h(p, \lambda)), \lambda) \equiv 0$. Also, in the next paragraph (p, λ) is in $\mathbb{R} \times \mathbb{R}$, not $\mathbb{R}^n \times \mathbb{R}$.
- p. 576** In Ex. 8.26 the signs are reversed: the $-$ sign corresponds to the supercritical Hopf; the $+$ sign corresponds to the subcritical Hopf.