

Differential Dynamical Systems

Errata (First Printing)

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Abstract

Errors are listed by page and line number. The symbol \implies means “replace with”. A negative line number means count from the bottom of the page. Equation lines are counted as one line.

Chap.	Page	Line	Change	Thanks to
1	10	-5	“These equations are linear” \implies “These equations are affine”	
	10	-4,-3	“then the equations of motion are not linear but are affine, see Exercise 9.9.” \implies “additional affine terms are added to the equations, see §2.1 and Exercise 9.10.”	
2	31	14	$v_i \neq 0 \implies v \neq 0$	AGH
	42	9	(2.30) should be (2.24)	
	42	-10	Insert (2.23) after “By the definition”	
	42	-6	$T(x)^k \implies T^k(x)$	DNK
	49	4	$n - k \implies 2m$	AGH
	49	5,6	$u_{k+1}, w_{k+1}, \dots, u_n, w_n \implies u_1, w_1, \dots, u_m, w_m$	
	49	8	$B_k \implies B_1$ AND $B_n \implies B_m$	
	49	9	$B_k \implies B_j$	
	49	11	$C_{k+1} + \dots + C_n \implies C_1 + \dots + C_m$	
	49	-6	$j = k + 1, \dots, n, \implies j = 1, \dots, m$	
	49	-3	$B_k \implies B_1$	
	50	-17	$(T - \lambda_j I)^{n_j} v = 0 \implies (T - \lambda_j I)^{n_j} v = 0$	
	56	15	Kronnecker \implies Kronecker	LOJ
	58	7	$Av_3 = 3v_3 \implies Av_3 = 1v_3$	CWW
	59	12	Add a subscript k : $c_{jlm} \implies c_{jklm}$ and $d_{jlm} \implies d_{jklm}$. Also $j \in \implies j, k \in$	
	59	12,13	$K/n_s \implies K/n_s^2$ on both lines	
65	-9	“for any linear operator” \implies “for any bounded linear operator”		
68	21 (Ex 9c)	“nilpotencies 0,1,2,3.” \implies “nilpotencies 1,2,3.”	SOT	
69	10	$\sum_{i=1}^{n_k} d_{ij} v_j \implies \sum_{j=1}^{n_k} d_{ij} v_j$	AGH	
3	76	18-19	“elements of a convergent” \implies “elements of a uniformly convergent”	
	79	4	to the phrase “with the L_∞ norm is complete” append “when E is compact”.	
	86	-15	“complete space $C^0(\mathbb{R}, \mathbb{R}^n)$ ” \implies “complete space $C^0(J, \mathbb{R}^n)$ ”	
	94	Fig 3.6	Change u_j to $u(t; y)$	
	98	Fig 3.7	Vertical axis should be labeled “ x_o ”, not “ x ”	PJR
	99	3	$x : J \rightarrow \mathbb{R}^n \implies x : J \rightarrow E$	
	99	7	$B_b(x_o) \implies B_{b_o}(x_o)$ (Two places!)	AGH
103	12	In the exponent, $2K$ should be K .	RC	

Chap.	Page	Line	Change	Thanks to	
4	111	7	(4.7) \implies (4.8)	SOT	
	119	11-12	“be appropriate rely” \implies “be appropriate to rely”		
	121	7	$g(\delta x) = o(\delta x^2) \implies g(\delta x) = O(\delta x^2)$		
	122	8	$y \leq \delta \implies y \leq K\delta$		
	122	11	“Let” \implies “Now assume that $ y_o \leq \delta$, let”		
	123	-2	$L(\varphi_t(z)) \implies L(\varphi_s(z))$		
	151	-8	$B_R \subset E \implies B_R \supset E$		
	151	(4.49)	This equation is incorrect. Replace it with		
			$R > \frac{r + \sigma}{2} \begin{cases} 2 & \alpha \leq 2 \\ \frac{\alpha}{\sqrt{\alpha-1}} & \alpha > 2 \end{cases}, \quad \alpha = b \max(1, \sigma^{-1})$		
	151	-5	$R > 38 \implies R > 152/\sqrt{15}$		
	151	-5	$B_{39} \implies B_{40}$		
	152	20	$\frac{d}{dt}(x + y) \implies \frac{d}{dt}(\gamma + y)$		
	154	4	$(\partial H/\partial y, \partial H/\partial x) \implies (\partial H/\partial y, -\partial H/\partial x)$		
	160	7	“is a unique the equilibrium” \implies “is a unique nonnegative equilibrium”		SOT
	161	7	$\dot{z} = 2z \implies \dot{z} = z$		KLS
162	-17	$0 \leq z < Z \implies 0 \leq z \leq Z$	SOT		
162	-5	$h(\omega(h^{-1}(y))) \implies h(\omega(h^{-1}(y)))$	SOT		
164	7	your systems \implies your system’s	SOT		
5	165	-2	“as $t \rightarrow \infty$ ” \implies “as $t \rightarrow -\infty$ ”	RHG	
	174	10	“ $x(t) =$ ” \implies “ $x(t; \sigma) =$ ”		
	176	-1	change the last $ x(t; \sigma) $ to $ x(s; \sigma) $		
	177	-5	“ $v(t) = v(T)$ ” \implies “ $v(t) = u(T)$ ”		
	192	5	$y = -x_2^2 - x_2^2 \implies y = -x_1^2 - x_2^2$		
6	200	-1	$T = 2\pi r^2 \implies T = 2\pi/r^2$		
	213	-7	$(y + \alpha x^2 y, -x + \beta y^2 x^2) = -((-y) \implies (-y + \alpha x^2 y, -x - \beta y^2 x^2) = -(-(-y))$		
7	252	5	For any functions \implies For any scalar functions	APR	
	256	3	change the x in the 23 element of the matrix (7.21) to $-x$		
	258	-5	and set $v_{ii}(0) \implies$ and set $v_{ij}(0)$		
	262	7	when $\varepsilon < t \implies$ when $\varepsilon < 1$		
	266	2	$< 9 \implies \leq 9$		SEO
	266	3	a Lyapunov basis is \implies an eigenvector basis is		RP
266	14	sides of length 1/3 \implies sides of length 1/2			

Chap.	Page	Line	Change	Thanks to
8	279	7	and when \implies and zero when	LOJ
	283	-8	$g(x) = Ax + O(3) \implies g(\xi) = A\xi + O(3)$	LOJ
	283	-4	calls $L_A \implies$ calls $-L_A$	LOJ
9	309	1	Make the two panes of Fig 8.15 the same size	
	335	-4	$= \int_{U_t} \text{tr}(Df(x(t)))dx \implies = \int_{U_t} \text{tr}(Df(x))dx$	
	346	- 8	$\frac{dq}{ds} \implies \frac{dq}{ds}(s)$ and $\frac{dt}{ds} \implies \frac{dt}{ds}(s)$	LOJ
	368	-5	Hamiltonian flow is \implies Hamiltonian flow on M_c is	
	369	9	$M_c \implies \theta$	LOJ
	387	-14	Casmir \implies Casimir	
	350	-12	$Dh(y) \implies Dh^T(y)$ (in two places) and $D^2h(y)\dot{y} \implies (D^2h(y)\dot{y})^T$	
	350	-11	$Dh(y) \implies Dh^T(y)$	
	370	6	$\omega = \pi(I) \implies \omega = \Omega(I)$	
	372	9	Thus E is bounded \implies Thus L is bounded	
	374	-1	let $Q \implies$ let \mathcal{Q}	
	375	7	$\Sigma = \implies S =$	
	389	5	Exercise 8. \implies (9.39).	
389	-6	$+\frac{mga}{I} \implies +2\frac{mga}{I}$	LOJ	
App	394	-1	<code>MatrixExp[tA]</code> \implies <code>MatrixExp[t A]</code>	
Bib	399	-3	Insert: Auslander, J. and J. A. Yorke (1980). "Interval Maps, Factors of Maps, and Chaos." <i>Thoku Math. J.</i> 32(2): 177-188.	
	400	3	Insert: Blanchard, F., E. Glasner, S. Kolyada and A. Maass (2002). "On Li-Yorke Pairs." <i>J. Reine Angew. Math.</i> 547: 51-68.	
Index	409	-6	Kronnecker \implies Kronecker	
	409	-19	add "governor 159"	
	412	-3	add "Watt, James 159"	