Differential Dynamical Systems
Errata (First Printing)

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Abstract

Errors are listed by page and line number. The symbol $\Longrightarrow$ 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	2	5	"(fluent quantities)" $\Longrightarrow$ "(fluxions)"	SS
	2	9	"find the fluxions" $\Longrightarrow$ "find the fluent quantities"	SS
	7	-3	"bounded sequence has a" $\Longrightarrow$ "bounded function has a"	SS
	10	-5	"These equations are linear" $\Longrightarrow$ "These equations are affine"	
	10	-4,-3	"then the equations of motion are not linear but are affine, see Exercise 9.9." $\Longrightarrow$ "additional affine terms are added to the equations, see §2.1 and Exercise 9.10."	
2	31	14	$v_i \neq 0 \Longrightarrow v \neq 0$	AGH
	41	-7	"matrices, then" $\Longrightarrow$ "matrices, then (in the Euclidean norm)"	
	42	9	(2.30) should be (2.24)	
	42	-10	Insert (2.23) after "By the definition"	
	42	-6	$T(x)^k \Longrightarrow T^k$(x)	DNK
	47	-6	"*fundamental matrix*" $\Longrightarrow$ "*(principal) fundamental matrix*"	SS
	49	4	$n - k \Longrightarrow 2m$	AGH
	49	5,6	$u_{k+1}, w_{k+1}, \ldots, u_n, w_n \Longrightarrow u_1, w_1, \ldots, u_m, w_m$	
	49	8	$B_k \Longrightarrow B_1$ AND $B_n \Longrightarrow B_m$	
	49	9	$B_k \Longrightarrow B_j$	
	49	11	$C_{k+1} + \cdots + C_n \Longrightarrow C_1 + \cdots + C_m$	
	49	-6	$j = k+1, \ldots, n, \Longrightarrow j = 1, \ldots, m$	
	49	-3	$B_k \Longrightarrow B_1$	
	50	-17	$(T - \lambda_j I)_j^{n_j} v = 0 \Longrightarrow (T - \lambda_j I)^{n_j} v = 0$	
	56	15	Kronnecker $\Longrightarrow$ Kronecker	LOJ
	58	7	$Av_3 = 3v_3 \Longrightarrow Av_3 = 1v_3$	CWW
	58	-15	"One says that" $\Longrightarrow$ "More precisely, one says that"	SS
	59	12	Add a subscript k: $c_{jlm} \Longrightarrow c_{jklm}$ and $d_{jlm} \Longrightarrow d_{jklm}$. Also $j \in \Longrightarrow j, k \in$	
	59	12,13	$K/n_s \Longrightarrow K/n_s^2$ (both lines)	
	63	1,2	"origin is unstable" $\Longrightarrow$ "zero solution is unstable" (both lines)	SS
	65	-9	"for any linear operator" $\Longrightarrow$ "for any bounded linear operator"	
	68	21 (Ex 9c)	"nilpotencies 0,1,2,3." $\Longrightarrow$ "nilpotencies 1,2,3."	SOT
	69	10	$\sum_{i=1}^{n_k} d_{ij} v_j \Longrightarrow \sum_{j=1}^{n_k} d_{ij} v_j$	AGH
3	76	18-19	"elements of a convergent" $\Longrightarrow$ "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 $C^0(\mathbb{R}, \mathbb{R}^n)$" $\Longrightarrow$ "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	$x : J \to \mathbb{R}^n \Longrightarrow x : J \to E$	
	99	7	$B_b(x_o) \Longrightarrow B_{b_o}(x_o)$ (Two places!)	AGH
	103	12	In the exponent, $2K$ should be K.	RC

Chap.	Page	Line	Change	Thanks to
4	111	7	(4.7) $\Longrightarrow$ (4.8)	
	119	11-12	"be appropriate rely" $\Longrightarrow$ "be appropriate to rely"	SOT
	121	7	$g(\delta x) = o(\delta x^2) \Longrightarrow g(\delta x) = O(\delta x^2)$	
	122	8	$y \leq \delta \Longrightarrow \lvert y\rvert \leq K\delta$	
	122	11	"Let" $\Longrightarrow$ "Now assume that $\lvert y_o\rvert \leq \delta$, let"	
	123	-2	$L(\varphi_t(z)) \Longrightarrow L(\varphi_s(z))$	
	151	-8	$B_R \subset E \Longrightarrow B_R \supset E$	
	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	$R > 38 \Longrightarrow R > 152/\sqrt{15}$	
	151	-5	$B_{39} \Longrightarrow B_{40}$	
	152	20	$\frac{d}{dt}(x+y) \Longrightarrow \frac{d}{dt}(\gamma+y)$	
	154	4	$(\partial H/\partial y, \partial H/\partial x) \Longrightarrow (\partial H/\partial y, -\partial H/\partial x)$	
	160	7	"is a unique the equilibrium" $\Longrightarrow$ "is a unique nonnegative equilibrium"	SOT
	161	7	$\dot{z} = 2z \Longrightarrow \dot{z} = z$	KLS
	162	-17	$0 \leq z < Z \Longrightarrow 0 \leq z \leq Z$	SOT
	162	-5	$h(\omega(h^{-1}(y)) \Longrightarrow h(\omega(h^{-1}(y)))$	SOT
	164	7	your systems $\Longrightarrow$ your system's	SOT
5	165	-2	"as $t \to \infty$" $\Longrightarrow$ "as $t \to -\infty$"	
	174	10	"$x(t) =$" $\Longrightarrow$ "$x(t;\sigma) =$"	
	176	-1	change the last $\lvert x(t;\sigma)\rvert$ to $\lvert x(s;\sigma)\rvert$	
	177	-5	"$v(t) = v(T)$" $\Longrightarrow$ "$v(t) = u(T)$"	
	192	5	$y = -x_2^2 - x_2^2 \Longrightarrow y = -x_1^2 - x_2^2$	RHG
6	200	-1	$T = 2\pi r^2 \Longrightarrow T = 2\pi/r^2$	
	213	-7	$(y + \alpha x^2 y, -x + \beta y^2 x^2) = -((-y) \Longrightarrow (-y + \alpha x^2 y, -x - \beta y^2 x^2) = -(-(-y)$	
	224	4	with only one change $\Longrightarrow$ for C^2 flows there is only one change	RM
	241	Ex. 2.12	Replace the $\dot{x}$ equation with $\dot{x} = x - y - x^2(x+2y) - xy^2$	RM
7	252	5	For any functions $\Longrightarrow$ For any scalar functions	
	256	3	change the x in the 23 element of the matrix (7.21) to $-x$	APR
	258	-5	and set $v_{ii}(0) \Longrightarrow$ and set $v_{ij}(0)$	
	262	7	when $\varepsilon < t \Longrightarrow$ when $\varepsilon < 1$	
	266	2	$< 9 \Longrightarrow \leq 9$	SEO
	266	3	a Lyapunov basis is $\Longrightarrow$ an eigenvector basis is	
	266	14	sides of length $1/3 \Longrightarrow$ sides of length $1/2$	RP

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