ERRATA - INTRODUCTION TO HAMILTONIAN DYNAMICAL SYSTEMS AND THE N-BODY PROBLEM

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- Pg 5, Ln -11: $H(\phi(t, z_0)) < M$.
- Pg 5, Ln -1: $H = (\omega/2)(x^2 + u^2)$.
- Pg 9, Fg B.4: Change 'k' to 'κ'.
- Pg 10, Ln 1: Change 'three' to 'two'.
- Pg 10, Ln 3: Change 'four' to 'three'.
- Pg 10, Ln 9: Change '(1)' to '(5)'.
- Pg 12, Ln 11: Change '$\mathbf{R}^4$' to '$\mathbb{R}^4$'.
- Pg 15, Ln 18: Change '$\mathbf{R}^3$' to '$\mathbb{R}^3$'.
- Pg 21, Eq 12: $\cdots, \dot{y} = -\frac{\partial H}{\partial x} = Kx + \frac{\partial U}{\partial x}$.
- Pg 22, Ln 5: Pg 23 Ln -7: Change 'polynomials' to 'functions'.
- Pg 26, Ln -6: Change '(C.11)' to '(C.12)'.
- Pg 26, Eq 14: $\cdots, 0 = Ky + \frac{\partial U}{\partial x}$,
- Pg 29, Ln 10: Change 'Siegal' to 'Siegel'.
- Pg 29, Pm 1.b: Change 'brakcet' to 'bracket'.
- Pg 29, Pm 3.c: $\cdots, y = k\mathrm{sn}\,(t, k)$
- Pg 30, Pm 5.c: Change 'Skecth' to 'Sketch'.
- Pg 32, Pm 14: Change '$+(3x_1^2 - \|x\|^2)$' to '$-\frac{1}{2}(3x_1^2 - \|x\|^2)$'
- Pg 32, Pm 14: Change 'x_2' to 'x_1'
- Pg 39, Ln 14: $(J^T O^T J)(J^T P^T J)$.
- Pg 48, Ln 12: $\gamma = 1/sqrt\{u, v\}$
- Pg 50, Lem 13: Change '$(\gamma \pm \delta i)^{-1}$' to '$(\gamma \pm \delta i)^{\pm 1}$'.
- Pg 58, Lem 5: Change 'any' to 'an'.
- Pg 59, Eq 5 change '$u_2 = x_2 + \xi_2$' to '$u_2 = x_2 - \xi_2$'.
- Pg 67, Lem 1: *Let T be a real symplectic matrix. If T has a real logarithm, then T has a real symplectic logarithm.*
- Pg 71, Pm 16: Change '$+(3x_1^2 - \|x\|^2)$' to '$-\frac{1}{2}(3x_1^2 - \|x\|^2)$'
- Pg 71, Pm 16: Change 'x_2' to 'x_1'
- Pg 72, Ln 2: Change 'his' to 'this'.
- Pg 82, Ln -2: Change 'Poincarè' to 'Poincaré'.
- Pg 89, Eq 8: $\cdots + \frac{\partial \Xi}{\partial z}(t, z) J \frac{\partial^2 \Xi}{\partial t \partial z}(t, z) = 0, \cdots$
- Pg 89, Thm 1: *A symplectic change of variables defined on a simply connected domain takes a Hamiltonian system into a Hamiltonian system.*
- Pg 91, Eq 3:

$$H = \sum_{i=1}^{N} \frac{\| v_i \|^2}{2m_i} - \cdots$$

- Pg 99, Ln 10: Change 'S_4' to 'S_2'.
- Pg 100, Eq 18: $\cdots, \dot{R} = \frac{\Theta^2}{r^3} - \frac{\mu}{r}, \cdots$
- Pg 100, Eq 19: $\ddot{r} = \dot{R} = \frac{c^2}{r^3} - \frac{\mu}{r^2}$

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- Pg 100, Eq 20: $\cdots = +c^2u^3 - \mu u^2$,
- Pg 101, Eq 23: $u_2 = (r_1 \cos\theta_1, r_1 \sin\theta_1), \cdots$
- Pg 101, Eq 24: $H = \frac{1}{2M_2}\{\cdots\} + \frac{1}{2M_3}\{\cdots\} - \cdots$
- Pg 107, Ln 13: Change 'in the paper' to 'in that paper'.
- Pg 130, Ln -1: Change 'ξ' to 't'.
- Pg 131, Ln 1: Change '$\frac{\partial\phi}{\partial\zeta}$' to '$\frac{\partial\phi}{\partial\xi}$' twice.
- Pg 131, Ln -3: Change '$\partial g(T,\xi')/\partial\xi$' to '$\partial g(T,\xi')/\partial t$'
- Pg 133, Eq 6:

$$\dot{x} = y + x(1 - x^2 - y^2),$$

$$\dot{y} = -x + y(1 - x^2 - y^2),$$

- Pg 133, Eq 7: $\dot{r} = r(1 - r^2), \cdots$
- Pg 133, Ln -6: $\dot{r} = -2r$
- Pg 133, Ln -5,6: Change $\exp -2\pi$ to $\exp -4\pi$.
- Pg 133, Ln -1: Change 'III.A.2' to 'IV.A.2'.
- Pg 134, Eq 8: Change '$\frac{\partial\phi(T,\xi')}{\partial\zeta}$' to '$\frac{\partial\phi(T,\xi')}{\partial\xi}$',
- Pg 135, Ln 2: Change 'IV.B.2' to 'V.C.1'.
- Pg 135, Ln -7: Change 'IV.A.2' to 'V.C.4'.
- Pg 135, Ln -2: Change 'III.A.2' to 'IV.A.2'.
- Pg 152, Pm 6: Change '$(Tx) =$' to '$f(Tx) =$'.
- Pg 159, Ln -9: Change '$y_2 + \mu$' to '$y_2 - \mu$'.
- Pg 159, Eq 1: $H = \frac{\|y\|^2}{2} - x^T K y - \frac{\mu}{d_1} - \frac{1-\mu}{d_2} + \mu x_1 + \frac{3}{2}\mu^2$
- Pg 160, Eq 2: $H = \epsilon^{-3}\left\{\frac{\|\eta\|^2}{2} - \frac{c^2}{\|\xi\|}\right\} - \xi^T K \eta + O(\epsilon)$
- Pg 161, Ln 5: $\| x \| \simeq \epsilon^2$
- Pg 167, Pm 4: Change '$+(3x_1^2 - \|x\|^2)$' to '$-\frac{1}{2}(3x_1^2 - \|x\|^2)$'
- Pg 167, Pm 4: Change 'x_2' to 'x_1'
- Pg 172, Ln 2: Change '(3)' to '(1)'.
- Pg 172, Ln 13: $H^* = G$
- Pg 172, Ln -6:

$$= \sum_{n=0}^{\infty} \left(\frac{\epsilon^n}{n!}\right) H_0^n(x)$$

- Pg 175, Eq 7: $W_1 = I^2\{2\sin 2\phi + \frac{1}{4}\sin 4\phi\}$
- Pg 183, Ln -12: Change 'H_1^0' to 'H_i^0'.
- Pg 184, Eq 10: $\cdots = -(m_1\lambda_1 + \cdots + m_{2n}\lambda_{2n})(s_1x_1)^{m_1}(s_2x_2)^{m_2}\cdots(s_{2n}x_{2n})^{m_{2n}}$
- Pg 184, Ln 8: $\cdots$ the eigenvalues are $-(m_1\lambda_1 + \cdots + m_{2n}\lambda_{2n})$
- Pg 184, Eq 15:

$$\dot{y}_i = y_i DH^{\#}(y_1y_{n+1}, \ldots, y_ny_{2n})$$

$$\dot{y}_{i+n} = y_{i+n} DH^{\#}(y_1y_{n+1}, \ldots, y_ny_{2n})$$

- Pg 198, Eq 36: Change '$4uv_{00}$' to '$4u_0v_0$'.
- Pg 198, Eqs 38 & 39: Change '$\beta/120$' to '$\beta/20$'
- Pg 199, Pm 2a: Change '$\{H_0^1, W_1\}$' to '$\{H_1^0, W_1\}$'.
- Pg 199, Pm 2b: $H^* = I + (3\gamma/8)I^2 + (17\gamma^2/32)I^3 + (5725\gamma/1024)I^4 + \cdots$
- Pg 200, Pm 8: Change 'x_1' to 'x_i' twice.
- Pg 211, Ln -13: $\cdots$ *to the 4-bifurcation point as* $\cdots$
- Pg 215, Ln -5: Change '$\gamma \to \epsilon\gamma$' to '$A \to \epsilon A$'.

- Pg 219, Eq 2: Change A_0 to

$$A_0 = \begin{pmatrix} 0 & \omega & 0 & 0 \\ -\omega & 0 & 0 & 0 \\ -\delta & 0 & 0 & \omega \\ 0 & -\delta & -\omega & 0 \end{pmatrix}$$

- Pg 219, Eq 7: Change B_0 and B_1 to

$$B_0 = \begin{pmatrix} -\omega i & 0 & 0 & 0 \\ 0 & \omega i & 0 & 0 \\ 0 & -\delta & \omega i & 0 \\ -\delta & 0 & 0 & -\omega i \end{pmatrix} \qquad B_1 = \begin{pmatrix} -ai & 0 & 0 & b \\ 0 & ai & b & 0 \\ 0 & 0 & ai & 0 \\ 0 & 0 & 0 & -ai \end{pmatrix}$$

- Pg 220, Eq 8: $\{\lambda^2 + (\omega + \nu a)^2\}^2 + 2\nu b\delta\{\lambda^2 - (\omega + \nu a)^2\} + \nu^2 b^2 \delta^2$,
- Pg 244 Ln5 $= 0 = \partial H_1(x, 1, t)/\partial x$,.
- Pg 249 Ln 15 Change ', that is,' to ',this is '.
- Pg 249 Ln -5 $X(f^{nm}(z_0)) < X(z_0) + m(r + 1)$.
- Pg 249 Ln -4 $X(f^{nm}(z_0)) \geq X(z_0) + mr$.
- Pg 249 Ln -3 $\frac{X(z_0)}{nm} + \frac{m}{nm} r \leq \frac{X(f^{nm}(z_0))}{nm} \leq \frac{X(z_0)}{nm} + \frac{m}{nm}(r + 1)$.
- Pg 250 Ln 10 'Hence $\lim_{n\to\infty} X(f^n(z_0))/n$ exists'.
- Pg 251 Ln 1 Change 'From Lemma 5 ' to 'From Lemma 4'.
- Pg 251 Ln 3 $X(z_n) + r \leq X(f^i(z_n)) < X(z_n) + r + 1$.
- Pg 251 Ln 6 $X(z_n) + r - 1 \leq X(f^i(z_n)) \leq X(z_0) + r + 2$.
- Pg 251 Ln -9 $f^q(z_n) = z_n + (p, 0)$,.
- Pg 253 Ln 17 $\rho_0 \leq p/q \leq \rho_1$.
- Pg 257 Ln -8 Add to the end of condition (iv') "and a smooth arc connecting $I^-(z_2)$ and $I^+(z_1) \cup \{(x, 1) : x \in \mathbf{R}\}$.
- Pg 258 Ln 10 '...must conntect $f(I^+(z_2)) \cup$'.
- Pg 258 Ln 13 '...intersecting $f(I^+(z_1)) \cup f(I^-(z_2))$'.
- Pg 261 Fg. D.7 Change f's to f^{i_1}'s and f^2 to f^{i_2}'s.
- Pg 261 Fg. D.7 Caption Change to "Image of $\{z : X(z) = X(z_1)\}$'.
- Pg 261 Ln 1 $I^+(f^{i_2}(z_2)) \cup \{(x, 1)x >$.
- Pg 263 Ln -18 Change 'a continuum' to 'a set'.
- Pg 263 Ln -16 Change 'a continuum' to 'a set'.
- Pg 264 Ln 22 $Y(f(x_0 + (i + 1)p/q, y_{i-1}))$.
- Pg 264 Ln 23 Add to the right hand side $+(x_0 + ip/q, 0)$.
- Pg 264 Ln 24 Add to the right hand side $+(x_0 + ip/q, 0)$.
- Pg 264 Ln 25 Change 'extending' to 'extended'.
- Pg 267 Ln 20 Change last word ('the') to 'which is the'.
- Pg 271 Ln 2 Change 'determine if it has' to 'i.e., find'.
- Pg 272 Ln -7 Change 'comparing' to 'compared'.
- Pg 273 Ln 10 Change p/g to p/q.
- Pg 275 Ln 5 Change 'lurid' to 'lucid'.
- Pg 277 Ln 15 Change 'Melss' to Meiss'.
- Pg 278 Ln 5 (i) $h(x + 1, x\prime + 1) = h(x, x\prime)$.
- Pg 281, Ln 8: Change 'Chrikov' to 'Chirikov'.
- Pg 281, Ln 27: Change '*Mech.* **72**, 173-179.' to '*Mech.* **1**, 12-30.'
- Pg 282, Ln 15: Change 'Eelements' to 'Elements'.