

Introduction to Numerical Methods for Time Dependent Differential Equations (by Heinz-O. Kreiss and Omar E. Ortiz). John Wiley & Sons.

Errata of the 1st edition, 1st print.

Updated errata available at: <http://www.famaf.unc.edu.ar/~ortiz/inmtdde/>

Some minor typos with no influence in the meaning or understanding of the text are not included in this errata.

Pages	Where	Incorrect	Correct
17	last line	$w(t) = \tilde{y} - y(t)$	$w(t) = \tilde{y}(t) - y(t)$
26	2nd line in (2.10)	$y(0) = 1$	$y(0) = y_0$
30	line 27	$v(0) = y_0$	$v_0 = y_0$
31	line 4	$f_y(v_n, t_n)$	$\partial f(v_n, t_n)/\partial y$
40	eq. in line 17	$\frac{k}{2}\varphi_1(t)$	$\frac{k}{2}\varphi_1(nk)$
45	eq. (3.20) second line	$v_{n+1} = k(q_1 + q_2),$	$v_{n+1} = kq_2,$
47	left table at the end	$1 \quad 0$	$0 \quad 0$
		$1 \quad \frac{1}{2} \quad \frac{1}{2}$	$1 \quad \frac{1}{2} \quad \frac{1}{2}$
49	eq. (3.25) 2nd line	$y(0) = 1$	$y(0) = y_0$
59	eq. in line 5	$D_- \sin(t_0)$	$D_- \sin(0)$
59	line 8	<i>discrete limit layer</i>	<i>discrete initial layer</i>
60	line 4	$ \rho_n \leq \varepsilon^2(1 + \mathcal{O}(k)).$	$ \rho_n \leq \text{const.}\varepsilon^2(1 + \mathcal{O}(k)).$
60–62		$y_t \quad ; \quad y_{tt}$	$\frac{dy}{dt} \quad ; \quad \frac{d^2y}{dt^2}$
61	line 4	y_{tt}	$\frac{d^2y}{dt^2}$
62	eq. (4.16)	$\frac{k}{2\varepsilon}e^{-t/\varepsilon}$	$\frac{k}{2\varepsilon^2}e^{-t/\varepsilon}$
63	line 10	repeated $(k_n^2/2)(d^2y/dt^2)_n$	should not be repeated
67	eq. (5.6)	$y_t = aiy + F(t),$	$\frac{dy}{dt} = aiy + F(t),$
68	line 17	(i.e., $\lambda k = \pm i$)	(i.e., $\lambda k \neq \pm i$)
68	eq. (5.12)	$\dots = \sigma_1\kappa_1^n + \sigma_2\kappa_2^n,$	$\dots = \sigma_1\kappa_1^n + \sigma_2\kappa_2^n,$
69	line 18	$\kappa_1, \kappa_2 = -1,$	$\kappa_1\kappa_2 = -1,$
72	line 2	(5.4)	(5.23)
74	line 4 (corrector)	$v_{n+1} = \frac{k}{24}(\dots$	$v_{n+1} = v_n + \frac{k}{24}(\dots$
95	in eq. in line 20	$u(x, 0) = \hat{u}(\omega, 0)$	$u(x, 0) = e^{2\pi i\omega x}\hat{u}(\omega, 0)$
95, 96	eqns. (8.16), (8.18)	$u_t(x, 0)$	$\frac{du}{dt}(x, 0)$
99	in Theorem 8.1	<i>Problem (8.21)</i>	<i>Problem (8.31)</i>

Page	Where	Incorrect	Correct
101	line 5	$2a \frac{\partial \bar{u}}{\partial x}(x, t) u(x, t) \Big _0^1$	$a \left(\frac{\partial \bar{u}}{\partial x}(x, t) u(x, t) + \bar{u}(x, t) \frac{\partial u}{\partial x}(x, t) \right) \Big _0^1$
102	eq. (8.42)	$\dots \leq \left(\frac{ A_1 }{4\delta} + 2 B_1 \right) \dots$	$\dots \leq \left(\frac{ A_1 ^2}{2\delta} + 2 B_1 \right) \dots$
107	line 25	$j \rightarrow 0$	$h \rightarrow 0$
117	Exer. 9.5 (b)	$j = 1, 2, \dots, 1 - h,$	$j = 1, 2, \dots, N - 1,$
118	eq. (9.46)	v_ω	v
118	eq. (9.48)	$\frac{v^{n+1} - v^n + v^{n-1}}{k^2}$	$\frac{v^{n+1} - 2v^n + v^{n-1}}{k^2}$
118	line 18	$0 < \sin^2(\pi\omega h) < \frac{1}{2}$	$0 < \sin^2(\pi\omega h) < 1$
126	2nd line in (10.28)	$\dots + \frac{\partial \varphi}{\partial x}(0, t) = \dots$	$\dots + \frac{\partial \varphi}{\partial t}(0, t) = \dots$
129	Exercise 10.2	“...code to compute ...”	“...code that implements Euler method to compute ...”
132	Lemma 10.5	$\max_{0 \leq j \leq N} f_j \leq \dots$	$\max_{0 \leq j \leq N} f_j ^2 \leq \dots$
133	eqns. (10.47) and (10.48)	$-2a \ v\ _{1, N-1}^2 + \dots$	$-2a \ D_- v\ _{2, N}^2 + \dots$
133	lines 13, 15, 16, 17, 19	$4a$	$12a$
135	1st line	$v_t \quad , \quad v_{0t}$	$\frac{dv}{dt} \quad , \quad \frac{dv_0}{dt}$
136	lines 4 and 14	$i = 0, 1$	$i = 1, 2$
151	eq. (A.7)	$\dots = \frac{k^2}{6} \frac{d^3 y}{dt^3}(t) + \dots$	$\dots = -\frac{k^2}{6} \frac{d^3 y}{dt^3}(t) + \dots$
151	eq. (A.10)	$\frac{k}{6} \left(\frac{d^3 y}{dt^3} - 3 \frac{d^3 \varphi_1}{dt^3} \right)$	$-\frac{k}{6} \left(\frac{d^3 y}{dt^3} + 3 \frac{d^2 \varphi_1}{dt^2} \right)$
152	eq. (A.11)	$-\frac{1}{6} \left(\frac{d^3 y}{dt^3} - 3 \frac{d^2 \varphi_1}{dt^2} \right)$	$-\frac{1}{6} \left(\frac{d^3 y}{dt^3} + 3 \frac{d^2 \varphi_1}{dt^2} \right)$
152	Theorem A.2	(A.2)	(A.4)
158	eq. previous to last	$\dots = y(t) + \frac{17}{192} k^3 \varphi_3(t) + \dots$	$\dots = y(t) - \frac{1}{8} k^3 \varphi_3(t) + \dots$
164	solution 5.3	y_{tn}	$\left(\frac{dy}{dt} \right)_n$