

Errata for Time Dependent Problems and Difference Methods
(Updated February 2011)

<u>Page and line:</u>	<u>Reads:</u>	<u>Should read:</u>
16, 7	Lebesgue	Lebesgue
44, 13	sch^2	\sin^2
72, -5	σ^2	σ
94, 3	2.5	2.8
94, 4	4.4	5.1
131, {10,12}	P	\hat{P}
135, -7	$P(x, t, \frac{\partial}{\partial t})$	$P(x, t, \frac{\partial}{\partial x})$
146, -5	$v(t + \Delta t, t)$	$v(t + \Delta t)$
148, 4	$S(0, 0)$	$S(t_0, t_0)$
161, 11	$e^{\alpha s(t_n - t_{\nu+1})k}$	$e^{\alpha s(t_n - t_{\nu+1})k}$
169, -3	$\ \mathbf{f}_{[\nu]}\ $	$\ \mathbf{f}_{[\nu]}\ _h$
170		All norms $\ \cdot\ $ should read $\ \cdot\ _h$
175, 15	$z_{m(q+1)}$	$z_{m(q+1)}$
181, 9	5.1.2	5.1.3
181, 10	$k\tau(\cdot, t_n)$	$k\tau(x, t_n)$
200, 13	$I - kD_{+y}D_{-y}$	$(I - kD_{+y}D_{-y})^{-1}$
224, {-3,-1}	$(1 - \delta_1 \xi ^{2r})$	$(1 - \delta_1 \xi ^{2r})^2$
225, -5	u_j	v_j
226, 1	b^2	$C_1 b^2$
226, 1	b^{2m}	$C_2 b^{2m}$
226, {3,4,5}	b^{-2}	$\frac{b^{-2}}{C_1}$
226, 6	$b^{2(m-1)}$	$\frac{C_1}{C_2} b^{2(m-1)}$
229, 4	-	+
229, 5	$-\lambda^2(\dots)$	$+\lambda^2(\dots)$
229, 5	$-\frac{\lambda^2}{4}$	$+\frac{\lambda^2}{4}$
229, 8	$\langle \dots \rangle$	$ \langle \dots \rangle $
229, -6	$\langle \dots \rangle$	$ \langle \dots \rangle $
230, 1	$\langle \dots \rangle$	$ \langle \dots \rangle $
237, 2	A (twice)	A_j (twice)
241, -1	Move "where $k > 0 \dots$ " after def. of k_4 , p. 242	
243, 8	α_i	α_j
243, 8	ρ	p
243, -5	$(p+1)!$	$(p+2)!$
244, 9	kQ	$k\tilde{Q}$
244, 9	kR	$k\tilde{R}$
245, 4	$p+1$	$2r-1$
245, 5	$p+1$	$2r-1$
267, 8	$-A_x u$	$-\frac{1}{2}A_x u$
267, 10	$-A_x \mathbf{w}$	$-\frac{1}{2}A_x \mathbf{w}$
272, 13	(\dots)	$2(\dots)$
274, 9	$= \dots$	$= (-1)^r \dots$
275, -6	2.5	2.6
289, -10	7.5 and 7.6	6.5 and 6.6
355, -10	Lotstedt	Lötstedt
366, 1	Replace $\lambda > 0$ by $\lambda < 0$ in the left part of Fig 9.1.3	

<u>Page and line:</u>	<u>Reads:</u>	<u>Should read:</u>
389, 19	$\begin{bmatrix} u \\ \tilde{\rho} \end{bmatrix} =$	$\begin{bmatrix} u \\ \tilde{\rho} \end{bmatrix}_t =$
394, -2	Replace t by y in Fig 9.6.2	
415, 10	$y - \alpha$	$\eta - \alpha$ (two places)
426, 4	$ \hat{u}(0, s) = s ^2 \hat{w}(0, s) \dots$	$ \hat{u}(0, s) ^2 = s ^2 \hat{w}(0, s) ^2 \dots$
434, 10	$ \hat{g}(\omega, s) $	$ \hat{g}(\omega, s) ^2$
436, -6	$g(y, t)$	$\tilde{g}(y, t)$
436, -6	$g = -L_0 v(0, y, t)$	$\tilde{g} = g - L_0 v(0, y, t)$
459, -6,	f_ν	f_j
463, 3	$u(1, t)$	$u_x(1, t)$
463, 11	Add after line 11: (We also use the notation $g_N(t)$ for $g_1(t)$)	
465, -2	$x^{-1/4}$	$x_j^{-1/4}$
494, -15	$d_{13} = 1.500\dots$	$d_{13} = -1.500\dots$
495, -3	$d_{57} = -0.8277\dots$	$d_{57} = -0.08277\dots$
496, -4	(10.1.2a)	(12.1.2a)
512, 3	\mathbf{M}_{11}^{q-1}	\mathbf{M}_{11}^{j-1}
513, 16	$\mathbf{H}^I(i\xi_0)$	$\mathbf{H}^I(i\tilde{\xi}_0)$
525, 2	$R^I u(0, t)$	$R^I u^I(0, t)$
552, 5	$D_+ v_0$	$D_+ v_0^{(1)}$
598, -9	$I + \lambda D_0 + \frac{\lambda^2}{2} D_+ D_-$	$I + k D_0 + \frac{k^2}{2} D_+ D_-$
598, -2	$u_0^{n+1} = 2u_1^n - u_2^{n-1}$	$v_0^{n+1} = 2v_1^n - v_2^{n-1}$
614, -6	u_{ij}^n	u_{1j}^n
615, 1	$u_{i,j+1}^n$	$u_{1,j+1}^n$
626, 7	$\sqrt{2\pi}$	2π

At many places there are a number of sequential equations and inequalities that occupy several lines. Some of these lines have an extra comma at the end, and it should be deleted. Page 229, lines 1-4 is such an example.