Comments and Errata

The Exponentially Convergent Trapezoidal Rule (*SIAM Review, Vol. 56, pp. 385–458, 2014*)

p. 386: Line above eq. (1.1): $0.6/\pi \to 0.8/\pi$

p. 386: In eq. (1.2): $E(0.36) \to E(0.6)$

p. 387: Line below the Poisson quote: eight digits → seven digits

p. 397: In the line above *Proof of Theorem 3.2 by residue calculus*, "from lowering $[0, 2\pi]$ to $[0, 2\pi] - ia'$" should be "from raising $[0, 2\pi]$ to $[0, 2\pi] + ia'$."

p. 398: The first integral in the r.h.s. of eq. (3.23) should have a plus sign in front of it.

p. 401: In the penultimate line on the page, the factor $(x^2 - a^2 + L^2)$ should be squared (same as in the last line on the page).

p. 402: The statement below the caption of Fig. 5.1, namely "The latter integral ... is bounded above by π/L" is incorrect. The section to the end of the proof should be replaced by

"The latter integral (which can be evaluated as an elliptic function) can be expanded for small a as $\pi/L + 4a^2/(3L^2) + O(a^4)$, so we can take $M = \big((\pi/L) + O(a^2)\big)\cosh(2\pi a/L)$. The error bound in (5.6) now becomes

$$\frac{2M}{e^{2\pi a/h} - 1} = \frac{2\big((\pi/L) + O(a^2)\big)\cosh(2\pi a/h)}{e^{2\pi a/h} - 1},$$

and the right-hand side is asymptotic to $\pi/L + O(a^2)$ in the limit $h \to 0$, with $h = o(a)$."

p. 405: In Table 6.1, second row, fourth column $(2\pi/n^2)^{(2/3)} \to (2\pi/n^2)^{(1/3)}$.

p. 409: In eq. (7.18): $q_{\text{INTERP2}}(z) \to q_{\text{INTERP2}}(\theta)$

p. 421: Six lines above the table: $-1.63999999985 \to -163.999999985$

p. 428: Regarding eq. (14.2): the mapping suggested in [148] is in fact $\xi = \tanh(x/2)$.

p. 434: Seven lines below eq. (15.2): at $t = 0$ → on $t \geq 0$.

p. 437: In eq. (15.11): $|e^{zt}| \to |e^{st}|$

p. 442: In the line above eq. (16.6) the Laplace transform analogy with (16.2) is less direct than implied here. The ODE in (16.5) has solution

$$\boldsymbol{u}(\xi) = \boldsymbol{u}_1 \frac{\sin(A^{1/2}\xi)}{\sin(A^{1/2})}$$

which can be established by many methods (Laplace transforms being one of them[1].) The contour integral (16.6) then follows from the Dunford-Taylor formula (see N. Hale & J.A.C. Weideman, Contour integral solution of elliptic PDEs in cylindrical domains. SIAM J. Sci. Comput. 37 (2015), no. 6, A2630–A2655).

p. 457: In reference [158] the correct title is *Handbook of Sinc Numerical Methods*.

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[1] The solution of (16.5) by Laplace transforms involves solving the auxiliary initial-value problem $\frac{d^2\boldsymbol{v}}{d\xi^2} + A\boldsymbol{v} = 0$, $\boldsymbol{v}(0) = 0$, $\boldsymbol{v}'(0) = 1$ in the usual manner. Then $\boldsymbol{u}(\xi) = \boldsymbol{u}_1\boldsymbol{v}(\xi)/\boldsymbol{v}(1)$.