Essential Partial Differential Equations,
Analytical and Computational Aspects

Errata

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Page 6 Line 2. The final expression for $u_{xx}$ should read $u_{xx} = -\frac{1}{2t}u(x,t) + \frac{x^2}{2t}u(x,t)$.

Page 9 Exercise 1.8(b). $u(x,t)$ is constant along the lines $x + (b - a)t = \text{constant}$.

Page 36 For $v$, read $\vec{v}$.

Page 54 Exercise 4.8. The second initial condition should read $u_y(x,0) = g_1(x)$.

Page 113 Exercise 6.12. $\rho = (\varepsilon + h)/(\varepsilon - h)$.

Page 117/8 Exercise 6.39 should be starred as difficult and not Exercise 6.38.

Page 190 Exercise 9.13. The initial conditions should read $u(x,0) \equiv 0$, $u_t(x,0) \equiv 0$.

Page 192 Exercise 9.18. $t \to \ln \sigma/(1 + \sigma)$.

Page 231 The quantity in Exercise 10.7 should be $4(U_P^n - U_P^{h/2})/3$.

Page 234 Exercise 10.22. In the final paragraph, $v = (x - x_{\ell-1})(x - x_{\ell})(x - x_{\ell+1})$ and not $u$.

Page 232 For $\Delta_x$, read $\triangle_x$.

Page 273 The displayed equation should read $U_m^{n+1} = U_m^n + \frac{k}{h^2}r_m^{-1}\delta_r(r_m\delta_r U_m^n)$.

Page 312 The second sentence should begin: “Show that $\xi_F \xi_B^* = 1$ and ...”.

Page 324 Line 11, $\kappa, \kappa_2$ should read $\kappa_1, \kappa_2$.

Page 329 Project 13.10, part (b). This refers to the local truncation error of the Du Fort–Frankel method.

Page 331 Project 13.13, line 1 should read $u(x,t) = e^{i\lambda t}$.
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