Errata
for the book
Wavelets and Multiwavelets
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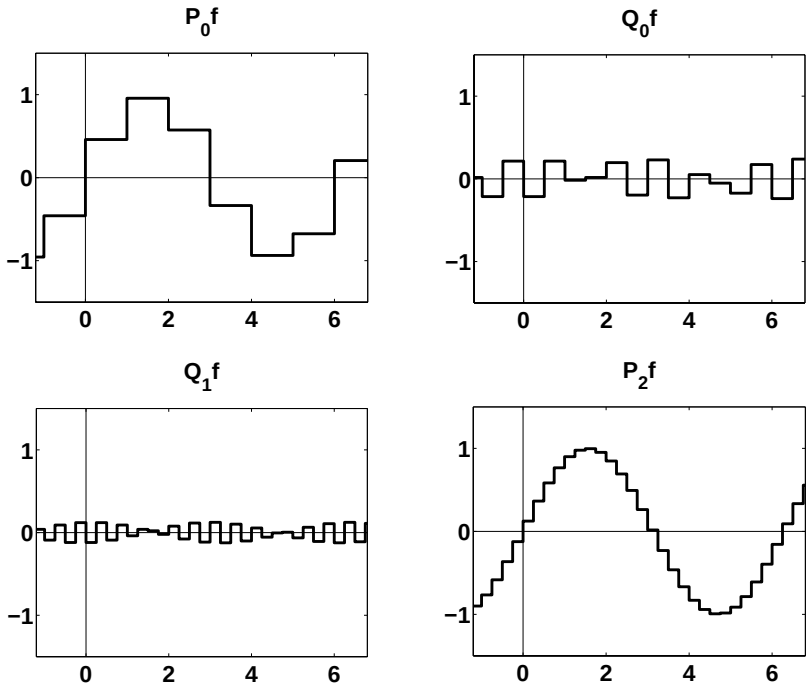
- Page 8, last paragraph: "... for each fixed x the sum only contains finitely many nonzero terms."
- Page 12, third equation: The summation index should be k.
- Page 19, figure 1.7: The pictures for $Q_0 f$ and $Q_1 f$ are wrong. The corrected images are



- Page 28, example 1.7: The continuous moment μ_2 is wrong. It should be

$$\mu_2 = \frac{6 - 3\sqrt{3}}{2}.$$

- Page 40, lemma 2.1: The second formula should be

$$\langle \psi_{n-1,j}, \tilde{\phi}_{nk} \rangle = g_{k-2j}.$$

- Page 40, proof of lemma 2.1: The $\tilde{\phi}$ in the two integrals should have a * (for complex conjugate) attached.
- Page 64, third equation: There should be extra subscripts on the h_j to indicate to which scaling function they belong. The corrected equation is

$$f(y,z) = \sqrt{2} \sum_{jk\ell} h_{1j} h_{2,j-k} h_{3,j-\ell} f(2y-k, 2z-l).$$

- Page 71, example 3.2: The second equation should read

$$\tilde{h}_0 + \tilde{h}_1 = \sqrt{2}.$$

- Page 77, example 3.3: The equation for h_0 has the wrong sign. It should read

$$h_0(z) = \frac{1-\sqrt{3}}{2}(z - (2+\sqrt{3})).$$

- Page 95, last formula for Tf: the summation indices j, k are interchanged.
- Page 109, theorem 5.19. The conclusion should read "... then ϕ and $\tilde{\phi}$ are biorthogonal."
- Page 177, center: in the paragraph text, the closing absolute value bar is missing in $|\phi(\xi)| < \epsilon$.
- page 124, last line: the arguments in the second set of brackets should be $2x-1$, not $2x+1$.
- page 128/129, formulas (6.7), (6.8): replace

$$|H(\xi + \frac{2\pi n}{m})|^2$$

by

$$H(\xi + \frac{2\pi n}{m})H(\xi + \frac{2\pi n}{m})^*.$$

- Page 129, second formula: replace $\ell \in \mathbb{N}$ by $\ell \in \mathbb{Z}$.
- Page 130, middle: "... support strictly contained in the interval $[k_0/(m-1), k_1/(m-1)]$."
- Page 131, first paragraph: "... for each fixed x the sum only contains finitely many nonzero terms."
- page 137, formula (6.16): replace

$$H(\xi)\tilde{H}(\xi)^* + H(\xi+\pi)H(\xi+\pi)^* = I. \tag{1}$$

by

$$\sum_{n=0}^{m-1} H(\xi + \frac{2\pi n}{m})\tilde{H}(\xi + \frac{2\pi n}{m})^* = I.$$

- Page 139, eq. (6.17): tildes are missing on the third line. This line should read

$$\sum H_k \tilde{G}^{(s)*}_{k-m\ell} = \sum G^{(s)}_k \tilde{H}^*_{k-m\ell} = 0,$$

- Page 140, definition 6.18: the exponent in both formulas should be k, not n.

- Page 142, example 6.4: $\boldsymbol{\mu}_1$ is wrong. It should be

$$\boldsymbol{\mu}_1 = \frac{1}{6}\begin{pmatrix}\sqrt{6}\\ 2\sqrt{3}\end{pmatrix}.$$

- Page 154, lemma 7.1: The second formula should be

$$\langle \boldsymbol{\psi}^{(t)}_{n-1,j}, \tilde{\boldsymbol{\phi}}_{nk}\rangle = G^{(t)}_{k-mj}.$$

- Page 167, last two formulas: replace the summation index t by ℓ, since t is already used as a superscript.

- page 170, algorithm 7.11, decomposition formula: range of t should be $t = 1, \ldots, m-1$.

- page 206: The formula for $\tilde{G}^{(j)}_{\text{new}}(z)$ is missing a *. It should read

$$\tilde{G}^{(j)}_{\text{new}}(z) = \tilde{G}^{(j)}(z) - \sum_{j=1}^{m-1} L^{(j)}(z^m)^* \tilde{G}^{(j)}(z).$$

- Page 231, Definition 11.14: Replace "Assume we are given $H(\xi)$ with $H(0) = 1$" by "Assume we are given $H(\xi)$ with $H(0)$ satisfying condition E".

- Page 231, Theorem 11.15: Replace "Assume that H satisfies condition E" with "Assume that $H(0)$ satisfies condition E".

- Page 244, **HM(s)** wavelet:

  It is stated that the parameter s must satisfy $-1 < s < 1/7$, and that for $s = 1/4$, V_0 consists of continuous, piecewise quadratic splines with integer knots. That value is outside the given range.

  The wording should be amended as follows: For $-1 < s < 1/7$, both $\boldsymbol{\phi}$ and $\tilde{\boldsymbol{\phi}}$ are continuous functions. For $s = 1/4$, the given V_0 is correct, but $\tilde{\boldsymbol{\phi}}$ is a distribution, not a function.

- Page 249, translation formula: exponential term on the right should be $e^{-ia\xi}$.

- Page 252, definition B.4: a_{21}, a_{31} should be a_{12}, a_{13}.