

1. Equation (3.6). With the convention

$$W(f, g) = fg' - f'g,$$

the printed formula

$$W(I_m(kx), K_m(kx)) = k$$

has the wrong sign/order. It should be written as

$$W(K_m(kx), I_m(kx)) = k,$$

or equivalently

$$W(I_m(kx), K_m(kx)) = -k.$$

2. Equation (3.15). The printed formula

$$W(I_m(ke^x), K_m(ke^x)) = 1$$

has the wrong sign/order. It should be

$$W(K_m(ke^x), I_m(ke^x)) = 1,$$

or equivalently

$$W(I_m(ke^x), K_m(ke^x)) = -1.$$

3. Equation (4.6). The Wronskian is written in the order $W(I, K)$ with a positive right-hand side. With the convention $W(f, g) = fg' - f'g$, either the order should be changed to $W(K, I)$, or the right-hand side should acquire a minus sign.

Also, in the text following (4.6), the reference to the “right-hand side of (3.3)” should be replaced by the “right-hand side of (4.4)”.

4. Equation (4.14). The printed formula has the order $W(I, K)$ with a positive right-hand side:

$$W(I, K) = \frac{1}{\Gamma(\dots)}.$$

It should instead be written as

$$W(K, I) = \frac{1}{\Gamma(\dots)},$$

or equivalently

$$W(I, K) = -\frac{1}{\Gamma(\dots)}.$$

5. Equation (4.23). The printed formula has the order $W(I, K)$ with a positive right-hand side:

$$W(I, K) = \frac{2}{\Gamma(\dots)}.$$

It should instead be written as

$$W(K, I) = \frac{2}{\Gamma(\dots)},$$

or equivalently

$$W(I, K) = -\frac{2}{\Gamma(\dots)}.$$

6. Equation (5.6). For the harmonic oscillator, the displayed Wronskian has the wrong order if the right-hand side is positive. It should be written in the form

$$W(K_{\beta/k}(\sqrt{k}u), K_{\beta/k}(-\sqrt{k}u)) = \textit{positiveconstant},$$

or, if the printed order is kept,

$$W(K_{\beta/k}(-\sqrt{k}u), K_{\beta/k}(\sqrt{k}u)) = -\textit{positiveconstant}.$$

7. Appendix C, Equation (C.5). The formula is inconsistent with (B.32) after setting $m = \frac{1}{2}$ and using the definitions in (C.2)–(C.3). A consistent version is

$$K_{\beta}(v) = \pi \left(\frac{I_{\beta,+}(v)}{\Gamma\left(\frac{3}{4} - \frac{\beta}{2}\right)} - \frac{I_{\beta,-}(v)}{\Gamma\left(\frac{1}{4} - \frac{\beta}{2}\right)} \right),$$

and

$$K_{\beta}(-v) = \pi \left(\frac{I_{\beta,+}(v)}{\Gamma\left(\frac{3}{4} - \frac{\beta}{2}\right)} + \frac{I_{\beta,-}(v)}{\Gamma\left(\frac{1}{4} - \frac{\beta}{2}\right)} \right).$$

Thus the printed formula appears to have both a missing factor of π and the gamma denominators attached to the wrong terms.

8. Equation (2.5). The domain of $L^{\max}$ is printed using

$$AC^1([0, \infty[).$$

Since the section treats a general interval $]a, b[$, this should be

$$AC^1(]a, b[).$$

9. Equation (2.11). The last term is printed as

$$(\Phi \mid L\Psi).$$

The variables in the identity are Φ and Ξ , so this should be

$$(\Phi \mid L\Xi).$$

10. After Equation (2.14). The dimension is printed as

$$\dim B = 2\nu_a + 2\nu_b.$$

It should be

$$\dim B = \nu_a + \nu_b,$$

because B is dual to $D(L^{\max})/D(L^{\min})$, whose dimension is $\nu_a + \nu_b$.

11. Equation (2.36). Inside the Wronskian, the expression

$$\Psi_a^0(z, x)$$

should be replaced by

$$\Psi_a^0(z, \cdot).$$

The Wronskian should take functions as its arguments, not the value at a fixed point.

12. Lemma 3.5, analytic continuation proof. In the second displayed formula, the expression factors out

$$K_m(ke^x),$$

but the last factor is printed as

$$C_{m,k}I_m(ke^x).$$

This should be

$$C_{m,k}K_m(ke^x).$$

13. Remark 3.6, Langer substitution identity. The potential term is printed as

$$+ ke^x.$$

It should be

$$+ k^2 e^{2x},$$

consistent with

$$M_k = -\partial_x^2 + k^2 e^{2x}.$$

14. Theorems 3.7 and 3.9. The operators are defined on $L^2(R)$, but the text says that the expression is given on

$$C_c^\infty([0, \infty]).$$

This should be

$$C_c^\infty(R).$$

15. Proof of Theorem 3.7. The proof says that the right-hand sides of (3.21), respectively (3.22), are candidates for inverses of

$$M_{i\ell}^{\infty}, \quad M_{i\ell}^0.$$

This is swapped. It should be

$$M_{i\ell}^0, \quad M_{i\ell}^{\infty},$$

respectively, matching the theorem statements.

16. Theorem 3.9, parametrization. The text says

$$\gamma = e^{i\alpha},$$

but the eigenvalue condition is of the form

$$e^{i\pi m} = \gamma.$$

Therefore the intended parametrization should probably be

$$\gamma = e^{i\pi\alpha},$$

or else the eigenvalue formula should use α/π instead of α .

17. Morse section before the eigenfunction table. The sentence

“We first find eigenvalues and corresponding eigenfunctions of (4.17).”

should refer to the Morse operator, hence to

$$(4.9),$$

not to (4.17).

18. Proof of Theorem 4.3. The sentence refers to the uniqueness of a closed realization of

$$N_{k,m}.$$

Since this is the Morse theorem, the operator should be

$$M_{\beta,k}.$$

19. Harmonic oscillator section. The sentence

“To describe the eigenfunctions of (4.17)”

should instead refer to the harmonic oscillator equation

$$(5.1).$$

20. Theorem 5.1, case $Rek = 0$. The point spectrum is printed as

$$\sigma_p(N_0) = .$$

Since the operator in this case is N_k , with $k = i\ell$, this should be

$$\sigma_p(N_k) = .$$

21. Proof of Theorem 5.1. The proof says that both

$$K_{\beta/k}(-\sqrt{k}v) \quad \text{and} \quad K_{\beta/k}(\sqrt{k}v)$$

are square-integrable near $-\infty$. The second statement should refer to $+\infty$. Thus the intended sentence should say that one solution is square-integrable near $-\infty$, while the other is square-integrable near $+\infty$.

22. Equation (5.14) comment. The text says that the spectra were computed in

$$(4.34).$$

It should refer to both

$$(4.34) \quad \text{and} \quad (4.35).$$