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Errata:
A Quantum Computation Workbook

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Contents
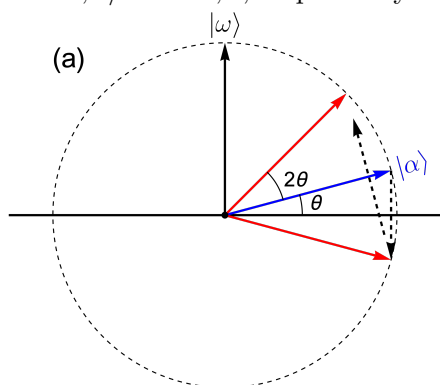
Chapter 4

Quantum Algorithms

Fig. 4.4b "... with respect to ω ..." $\rightarrow$ "... with respect to $|v\rangle$ ..."

Fig. 4.5a $\theta, \theta/2 \rightarrow 2\theta, \theta$, respectively. Here is the correct figure for Fig. 4.5**a**:

Below Eq. (4.64) on page 161 "... performing the transformation $\hat{U}$ repeatedly depending on the value y on the native register." $\rightarrow$ "... performing the transformation $\hat{U}$ repeatedly depending on value x on the native register."

Problem 4.1 (a) "Classically (...), ..." –> "Show that classically (...), ...".

Chapter 5

Quantum Decoherence

Section 5.1 In several places, "Zender" must be corrected to "Zehnder".

Section 5.1, p.191, the last line "In the blue arm, photon passes through ..." → "In the red arm, photon passes through ...".

Section 5.1, p.194, below Eq. (5.6) "Whence the photon detection probabilities ..." → "Hence the photon detection probabilities...".

Section 5.3, p.216, line 8 "...probabilities $\mathscr{F}_m(\hat{\rho})$" must reads as "...probabilities $\mathrm{Tr}\,\mathscr{F}_m(\hat{\rho})$".

Section 5.4, Eq.(5.99) It should read as

$$\hat{G} = \frac{1}{2} \sum_{\mu > 0} \hat{L}_\mu^\dagger \hat{L}_\mu \,.$$

Chapter 6

Quantum Error-Correction Codes

Section 6.4, p. 298, above Eq. (6.101) "whence" → "hence".

Appendix A

Linear Algebra

Appendix A.1.2, p. 351, above Eq. (A.5) "Whence u is orthogonal ..." $\rightarrow$ "Hence u is orthogonal ...".

Appendix A.4.1, p. 364, above Eq. (A.55) "Whence, $\hat{A} \geq 0$." $\rightarrow$ "Hence, $\hat{A} \geq 0$."

Appendix B

Superoperators

Appendix B.2.3 between Eqs. (B.30) and (B.31) $\{v_j\} \to \{|v_j\rangle\}$ and $|w_k\rangle \to \{|w_k\rangle\}$

Eq. (B.56) $|\Psi\rangle\langle\Psi|$ should be replaced by $|\Phi\rangle\langle\Phi|$.

Appendix B.4, p. 393, the second last line "Whence, transposition ..." $\to$ "Hence, transposition ...".