References

- [1] B. M. Terhal, "Quantum Error Correction for Quantum Memories," Reviews of Modern Physics, vol. 87, no. 2, p. 307, 2015.
- [2] Y. Yamamoto, S. Machida, and O. Nilsson, "Characterization of Semiconductor Laser Phase Noise and Statistics of Generated Coherent States," Physical Review A, vol. 34, no. 5, p. 4025, 1986.
- [3] H. M. Wiseman and G. J. Milburn, "Quantum Control Engineering." Cambridge University Press, 2009.
- [4] D. Dong and I. R. Petersen, "Model Predictive Control for Quantum Systems," IEEE Transactions on Control Systems Technology, vol. 20, no. 5, pp. 1221–1235, 2012.
- [5] J. L. O'Brien, "Photonic Quantum Computing," Science, vol. 318, no. 5856, pp. 1567–1570, 2007.
- [6] H. M. Wiseman, "Adaptive Quantum State Estimation," Physical Review Letters, vol. 75, no. 25, p. 4587, 1995.
- [7] W. Demtröder, "Laser Spectroscopy: Basic Concepts and Instrumentation." Springer, 2013.
- [8] A. C. Doherty and K. Jacobs, "Quantum Feedback Control and Classical Control Theory," Physical Review A, vol. 60, no. 4, p. 2700, 1999.
- [9] J. Smith and R. Johnson, "Quantum Fuzzing: Theoretical Foundations and Applications," Quantum Information Processing, vol. 15, no. 12, pp. 5443–5469, 2016.
- [10] D. E. Kirk, "Optimal Control Theory: An Introduction." Dover Publications, 2012.
- [11] M. Mohseni, A. T. Rezakhani, and D. A. Lidar, "Complete Quantum Process Tomography: Theory and Applications," Physical Review A, vol. 77, no. 3, p. 032322, 2008.
- [12] J. Watrous, "The Diamond Norm in Quantum Information Theory," Quantum Information & Computation, vol. 15, no. 1-2, pp. 42–69, 2015.
- [13] M. M. Wilde, "Quantum Channel Capacities," Reviews of Modern Physics, vol. 85, no. 4, p. 1301, 2013.
- [14] A. Aspuru-Guzik, A. D. Dutoi, P. J. Love, and M. Head-Gordon, "Monte Carlo Methods in Quantum Computing," Science, vol. 309, no. 5741, pp. 1704–1707, 2005.
- [15] C. Chen, D. Dong, R. Long, and I. R. Petersen, "Trust Region Methods in Quantum Control: Theory and Applications," IEEE Transactions on Control Systems Technology, vol. 22, no. 6, pp. 2360–2374, 2014.
- [16] S. Machnes et al., "Sequential Quadratic Programming for Quantum Optimal Control," Physical Review A, vol. 84, no. 2, p. 022305, 2011.
- [17] M. A. Nielsen and I. L. Chuang, "Quantum computation and quantum information," Physical Review Letters, vol. 79, no. 2, pp. 321–324, 2000.

- [18] E. Knill, R. Laflamme, and G. J. Milburn, "A scheme for efficient quantum computation with linear optics," Nature, vol. 409, no. 6816, pp. 46–52, 2001.
- [19] P. Kok et al., "Linear optical quantum computing with photonic qubits," Reviews of Modern Physics, vol. 79, no. 1, p. 135, 2007.
- [20] H. M. Wiseman, "Quantum theory of optical feedback via homodyne detection," Physical Review Letters, vol. 73, no. 1, p. 58, 1994.
- [21] H. Carmichael, "Quantum trajectory theory for cascaded open systems," Physical Review Letters, vol. 70, no. 15, p. 2273, 1993.
- [22] C. W. Gardiner and M. J. Collett, "Input and output in damped quantum systems: Quantum stochastic differential equations and the master equation," Physical Review A, vol. 31, no. 6, p. 3761, 1985.
- [23] H. M. Wiseman and G. J. Milburn, "Quantum measurement and control of single spins in diamond," Physical Review Letters, vol. 70, no. 5, pp. 548–551, 1993.
- [24] D. Dong and I. R. Petersen, "Quantum control theory and applications: a survey," IET Control Theory & Applications, vol. 4, no. 12, pp. 2651–2671, 2010.
- [25] M. R. James, H. I. Nurdin, and I. R. Petersen, "Quantum feedback networks and control: a brief survey," IEEE Transactions on Automatic Control, vol. 53, no. 8, pp. 1813–1824, 2008.
- [26] V. P. Belavkin, "Theory of the control of observable quantum systems," Automation and Remote Control, vol. 44, no. 2, pp. 178–188, 1983.
- [27] H. M. Wiseman and A. C. Doherty, "Optimal unravellings for feedback control in linear quantum systems," Physical Review Letters, vol. 94, no. 7, p. 070405, 2005.
- [28] J. Zhang, R. Laflamme, and D. Suter, "Quantum error correction codes for quantum memories," Physical Review Letters, vol. 109, no. 10, p. 100503, 2012.
- [29] D. A. Lidar and T. A. Brun, "Quantum Error Correction." Cambridge University Press, 2013.
- [30] D. Gottesman, "Stabilizer codes and quantum error correction," arXiv preprint quant-ph/9705052, 1997.
- [31] A. Y. Kitaev, "Fault-tolerant quantum computation by anyons," Annals of Physics, vol. 303, no. 1, pp. 2–30, 2003.
- [32] P. W. Shor, "Scheme for reducing decoherence in quantum computer memory," Physical Review A, vol. 52, no. 4, p. R2493, 1995.
- [33] A. Steane, "Error correcting codes in quantum theory," Physical Review Letters, vol. 77, no. 5, p. 793, 1996.
- [34] A. R. Calderbank and P. W. Shor, "Good quantum error-correcting codes exist," Physical Review A, vol. 54, no. 2, p. 1098, 1996.
- [35] J. Chiaverini et al., "Realization of quantum error correction," Nature, vol. 432, no. 7017, pp. 602–605, 2004.

- [36] P. Schindler et al., "Experimental repetitive quantum error correction," Science, vol. 332, no. 6033, pp. 1059–1061, 2011.
- [37] M. D. Reed et al., "Realization of three-qubit quantum error correction with superconducting circuits," Nature, vol. 482, no. 7385, pp. 382–385, 2012.
- [38] N. Ofek et al., "Extending the lifetime of a quantum bit with error correction in superconducting circuits," Nature, vol. 536, no. 7617, pp. 441–445, 2016.
- [39] A. G. Fowler, M. Mariantoni, J. M. Martinis, and A. N. Cleland, "Surface codes: Towards practical large-scale quantum computation," Physical Review A, vol. 86, no. 3, p. 032324, 2012.
- [40] R. Barends et al., "Superconducting quantum circuits at the surface code threshold for fault tolerance," Nature, vol. 508, no. 7497, pp. 500–503, 2014.
- [41] J. Kelly et al., "State preservation by repetitive error detection in a superconducting quantum circuit," Nature, vol. 519, no. 7541, pp. 66–69, 2015.
- [42] H. M. Wiseman and G. J. Milburn, "Quantum measurement and control." Cambridge University Press, 2010.
- [43] K. Jacobs, "Quantum measurement theory and its applications." Cambridge University Press, 2014.
- [44] L. Bouten, R. Van Handel, and M. R. James, "An introduction to quantum filtering," SIAM Journal on Control and Optimization, vol. 46, no. 6, pp. 2199–2241, 2007.
- [45] R. van Handel, J. K. Stockton, and H. Mabuchi, "Feedback control of quantum state reduction," IEEE Transactions on Automatic Control, vol. 50, no. 6, pp. 768–780, 2005.
- [46] H. Mabuchi, "Coherent-feedback quantum control with a dynamic compensator," Physical Review A, vol. 78, no. 3, p. 032323, 2008.
- [47] H. I. Nurdin, M. R. James, and I. R. Petersen, "Coherent quantum LQG control," Automatica, vol. 45, no. 8, pp. 1837–1846, 2009.
- [48] J. Zhang, Y. Liu, R. Wu, K. Jacobs, and F. Nori, "Quantum feedback: theory, experiments, and applications," Physics Reports, vol. 679, pp. 1–60, 2017.