

## References Cited

- [Aha2002] D. Aharonov and T. Naveh. “Quantum NP - A Survey.” arXiv:quant-ph/0210077 (2002). URL <http://arXiv.org/abs/quant-ph/0210077>.
- [Aha2007] D. Aharonov, W. van Dam, J. Kempe, Z. Landau, S. Lloyd, and O. Regev. “Adiabatic Quantum Computation is Equivalent to Standard Quantum Computation.” SIAM Journal on Computing, 37(1), pp. 166–194 (2007). URL <https://doi.org/10.1137/S0097539705447323>.
- [Alb2012] T. Albash, S. Boixo, D. A. Lidar, and P. Zanardi. “Quantum adiabatic Markovian master equations.” New Journal of Physics, 14(12), p. 123016 (2012). URL <https://doi.org/10.1088%2F1367-2630%2F14%2F12%2F123016>.
- [Alb2015a] T. Albash, I. Hen, F. M. Spedalieri, and D. A. Lidar. “Reexamination of the evidence for entanglement in a quantum annealer.” Phys. Rev. A, 92, p. 062328 (2015). URL <https://link.aps.org/doi/10.1103/PhysRevA.92.062328>.
- [Alb2015b] T. Albash and D. A. Lidar. “Decoherence in adiabatic quantum computation.” Phys. Rev. A, 91, p. 062320 (2015). URL <https://link.aps.org/doi/10.1103/PhysRevA.91.062320>.
- [Alb2015c] T. Albash, W. Vinci, A. Mishra, P. A. Warburton, and D. A. Lidar. “Consistency tests of classical and quantum models for a quantum annealer.” Phys. Rev. A, 91, p. 042314 (2015). URL <https://link.aps.org/doi/10.1103/PhysRevA.91.042314>.
- [Alb2017] T. Albash, V. Martin-Mayor, and I. Hen. “Temperature Scaling Law for Quantum Annealing Optimizers.” Phys. Rev. Lett., 119, p. 110502 (2017). URL <https://link.aps.org/doi/10.1103/PhysRevLett.119.110502>.
- [Alb2018] T. Albash and D. A. Lidar. “Adiabatic quantum computation.” Rev. Mod. Phys., 90, p. 015002 (2018). URL <https://link.aps.org/doi/10.1103/RevModPhys.90.015002>.
- [Alb2019a] T. Albash. “Role of nonstoquastic catalysts in quantum adiabatic optimization.” Phys. Rev. A, 99, p. 042334 (2019). URL <https://link.aps.org/doi/10.1103/PhysRevA.99.042334>.
- [Alb2019b] T. Albash, V. Martin-Mayor, and I. Hen. “Analog errors in Ising machines.” Quantum Science and Technology, 4(2), p. 02LT03 (2019). URL <https://doi.org/10.1088%2F2058-9565%2Fab13ea>.
- [Ama1993] P. Amara, D. Hsu, and J. E. Straub. “Global energy minimum searches using an approximate solution of the imaginary time Schrödinger equation.” The Journal of Physical Chemistry, 97(25), pp. 6715–6721 (1993). URL <http://pubs.acs.org/doi/abs/10.1021/j100127a023>.
- [Ami2009] M. H. S. Amin. “Consistency of the Adiabatic Theorem.” Phys. Rev. Lett., 102, p. 220401 (2009). URL <https://link.aps.org/doi/10.1103/PhysRevLett.102.220401>.
- [Apo1988] B. Apolloni, N. Cesa-Bianchi, and D. de Falco. “A numerical implementation of quantum annealing.” In “Proceedings of the Ascona/Locarno Conference,” p. 97 (1988). URL <http://homes.di.unimi.it/cesa-bianchi/Pubblicazioni/quantumAnnealing.pdf>.
- [Apo1989] B. Apolloni, C. Carvalho, and D. de Falco. “Quantum stochastic optimization.” Stochastic Processes and their Applications, 33(2), pp. 233–244 (1989). URL <http://www.sciencedirect.com/science/article/pii/0304414989900409>.

- [Ata2021] J. Atalaya, S. Zhang, M. Y. Niu, A. Babakhani, H. C. H. Chan, J. M. Epstein, and K. B. Whaley. “Continuous quantum error correction for evolution under time-dependent Hamiltonians.” Phys. Rev. A, 103, arXiv:2003.11248 (pages 21) (2021). URL <https://link.aps.org/doi/10.1103/PhysRevA.103.042406>.
- [Bar1982] F. Barahona. “On the computational complexity of Ising spin glass models.” Journal of Physics A: Mathematical and General, 15(10), pp. 3241–3253 (1982). URL <https://doi.org/10.1088%2F0305-4470%2F15%2F10%2F028>.
- [Bau2018] J. Bausch and E. Crosson. “Analysis and limitations of modified circuit-to-Hamiltonian constructions.” Quantum, 2, p. 94 (2018). URL <https://doi.org/10.22331/q-2018-09-19-94>.
- [Bia2008] J. D. Biamonte and P. J. Love. “Realizable Hamiltonians for universal adiabatic quantum computers.” Phys. Rev. A, 78, p. 012352 (2008). URL <https://link.aps.org/doi/10.1103/PhysRevA.78.012352>.
- [Boi2014] S. Boixo, T. F. Ronnow, S. V. Isakov, Z. Wang, D. Wecker, D. A. Lidar, J. M. Martinis, and M. Troyer. “Evidence for quantum annealing with more than one hundred qubits.” Nat. Phys., 10(3), pp. 218–224 (2014). URL <https://doi.org/10.1038/nphys2900>.
- [Boi2016] S. Boixo, V. N. Smelyanskiy, A. Shabani, S. V. Isakov, M. Dykman, V. S. Denchev, M. H. Amin, A. Y. Smirnov, M. Mohseni, and H. Neven. “Computational multiqubit tunnelling in programmable quantum annealers.” Nature Communications, 7, pp. 10327 EP – (2016). URL <http://dx.doi.org/10.1038/ncomms10327>.
- [Boo2020] K. Boothby, P. Bunyk, J. Raymond, and A. Roy. “Next-Generation Topology of D-Wave Quantum Processors.” arXiv e-prints, arXiv:2003.00133 (2020). 2003.00133, URL <https://arxiv.org/abs/2003.00133>.
- [Bra2008] S. Bravyi, D. P. DiVincenzo, R. I. Oliveira, and B. M. Terhal. “The Complexity of Stoquastic Local Hamiltonian Problems.” Quant. Inf. Comp., 8(5), p. 0361 (2008). URL <https://arxiv.org/abs/quant-ph/0606140>.
- [Bra2009] S. Bravyi and B. Terhal. “Complexity of Stoquastic Frustration-Free Hamiltonians.” SIAM Journal on Computing, 39(4), pp. 1462–1485 (2009). URL <http://dx.doi.org/10.1137/08072689X>.
- [Bra2015] S. Bravyi. “Monte Carlo Simulation of Stoquastic Hamiltonians.” Quantum Info. Comput., 15(13–14), pp. 1122–1140 (2015). URL <https://arxiv.org/abs/1402.2295>.
- [Bra2017] S. Bravyi and D. Gosset. “Polynomial-Time Classical Simulation of Quantum Ferromagnets.” Phys. Rev. Lett., 119, p. 100503 (2017). URL <https://link.aps.org/doi/10.1103/PhysRevLett.119.100503>.
- [Bra2021] L. T. Brady, C. L. Baldwin, A. Bapat, Y. Kharkov, and A. V. Gorshkov. “Optimal Protocols in Quantum Annealing and Quantum Approximate Optimization Algorithm Problems.” Phys. Rev. Lett., 126, arXiv:2003.08952 (pages 6) (2021). URL <https://link.aps.org/doi/10.1103/PhysRevLett.126.070505>.
- [Bre2002] H.-P. Breuer and F. Petruccione. The Theory of Open Quantum Systems. Oxford University Press, Oxford (2002).

- [Cah2018] L. Caha, Z. Landau, and D. Nagaj. “Clocks in Feynman’s computer and Kitaev’s local Hamiltonian: Bias, gaps, idling, and pulse tuning.” *Phys. Rev. A*, 97, p. 062306 (2018). URL <https://link.aps.org/doi/10.1103/PhysRevA.97.062306>.
- [Chi2003] A. M. Childs, R. Cleve, E. Deotto, E. Farhi, S. Gutmann, and D. A. Spielman. “Exponential Algorithmic Speedup by a Quantum Walk.” In “Proceedings of the Thirty-Fifth Annual ACM Symposium on Theory of Computing,” STOC ’03, pp. 59–68. Association for Computing Machinery, New York, NY, USA (2003). URL <https://doi.org/10.1145/780542.780552>.
- [Cho2011] V. Choi. “Minor-embedding in adiabatic quantum computation: II. Minor-universal graph design.” *Quant. Inf. Proc.*, 10(3), pp. 343–353 (2011). URL [dx.doi.org/10.1007/s11128-010-0200-3](https://dx.doi.org/10.1007/s11128-010-0200-3).
- [Cro2014] E. Crosson, E. Farhi, C. Yen-Yu Lin, H.-H. Lin, and P. Shor. “Different Strategies for Optimization Using the Quantum Adiabatic Algorithm.” arXiv e-prints, arXiv:1401.7320 (2014). URL <https://arxiv.org/abs/1401.7320>.
- [Cro2020] E. Crosson, T. Albash, I. Hen, and A. P. Young. “De-Signing Hamiltonians for Quantum Adiabatic Optimization.” *Quantum*, 4, arXiv:2004.07681 (2020). URL <https://doi.org/10.22331/q-2020-09-24-334>.
- [Cro2021a] E. Crosson and A. W. Harrow. “Rapid mixing of path integral Monte Carlo for 1D stoquastic Hamiltonians.” *Quantum*, 5, arXiv:1812.02144 (2021). URL <https://doi.org/10.22331/q-2021-02-11-395>.
- [Cro2021b] E. J. Crosson and D. A. Lidar. “Prospects for quantum enhancement with diabatic quantum annealing.” *Nature Reviews Physics*, <https://arxiv.org/abs/2008.09913> (2021). URL <https://doi.org/10.1038/s42254-021-00313-6>.
- [Dav1978] E. B. Davies and H. Spohn. “Open quantum systems with time-dependent Hamiltonians and their linear response.” *Journal of Statistical Physics*, 19(5), pp. 511–523 (1978). URL <https://doi.org/10.1007/BF01011696>.
- [Dei2007] P. Deift, M. B. Ruskai, and W. Spitzer. “Improved Gap Estimates for Simulating Quantum Circuits by Adiabatic Evolution.” *Quantum Information Processing*, 6(2), pp. 121–125 (2007). URL <https://doi.org/10.1007/s11128-006-0045-y>.
- [Den2017] V. S. Denchev, M. Mohseni, and H. Neven. “Quantum assisted optimization.” International Patent Application WO 2017/189052 A1 (2017).
- [Doo2020] S. Dooley, G. Kells, H. Katsura, and T. C. Dorlas. “Simulating quantum circuits by adiabatic computation: Improved spectral gap bounds.” *Phys. Rev. A*, 101, p. 042302 (2020). URL <https://link.aps.org/doi/10.1103/PhysRevA.101.042302>.
- [Dur2019] G. A. Durkin. “Quantum speedup at zero temperature via coherent catalysis.” *Phys. Rev. A*, 99, p. 032315 (2019). URL <https://link.aps.org/doi/10.1103/PhysRevA.99.032315>.
- [DW2017] “Reverse Quantum Annealing for Local Refinement of Solutions.” Tech. Rep. 14-1018A-A, D-Wave Systems (2017). URL [https://www.dwavesys.com/sites/default/files/14-1018A-A\\_Reverse\\_Quantum\\_Annealing\\_for\\_Local\\_Refinement\\_of\\_Solutions.pdf](https://www.dwavesys.com/sites/default/files/14-1018A-A_Reverse_Quantum_Annealing_for_Local_Refinement_of_Solutions.pdf).

- [Far2000] E. Farhi, J. Goldstone, S. Gutmann, and M. Sipser. “Quantum Computation by Adiabatic Evolution.” arXiv e-prints, arXiv:quant-ph/0001106 (2000). URL <https://arxiv.org/abs/quant-ph/0001106>.
- [Far2001] E. Farhi, J. Goldstone, S. Gutmann, J. Lapan, A. Lundgren, and D. Preda. “A Quantum Adiabatic Evolution Algorithm Applied to Random Instances of an NP-Complete Problem.” *Science*, 292(5516), pp. 472–475 (2001). URL <http://www.sciencemag.org/content/292/5516/472>.
- [Far2012] E. Farhi, D. Gosset, I. Hen, A. W. Sandvik, P. Shor, A. P. Young, and F. Zamponi. “Performance of the quantum adiabatic algorithm on random instances of two optimization problems on regular hypergraphs.” *Phys. Rev. A*, 86, p. 052334 (2012). URL <https://link.aps.org/doi/10.1103/PhysRevA.86.052334>.
- [Far2014] E. Farhi, J. Goldstone, and S. Gutmann. “A Quantum Approximate Optimization Algorithm.” arXiv e-prints, arXiv:1411.4028 (2014). URL <https://arxiv.org/abs/1411.4028>.
- [Far2016] E. Farhi and A. W. Harrow. “Quantum Supremacy through the Quantum Approximate Optimization Algorithm.” arXiv e-prints, arXiv:1602.07674 (2016). URL <https://arxiv.org/abs/1602.07674>.
- [Fin1994] A. B. Finnila, M. A. Gomez, C. Sebenik, C. Stenson, and J. D. Doll. “Quantum annealing: A new method for minimizing multidimensional functions.” *Chemical Physics Letters*, 219(5–6), pp. 343–348 (1994). URL [http://dx.doi.org/10.1016/0009-2614\(94\)00117-0](http://dx.doi.org/10.1016/0009-2614(94)00117-0).
- [Gan2013] A. Ganti and R. D. Somma. “On the gap of Hamiltonians for the adiabatic simulation of quantum circuits.” *International Journal of Quantum Information*, 11(07), p. 1350063 (2013). <https://doi.org/10.1142/S0219749913500639>, URL <https://doi.org/10.1142/S0219749913500639>.
- [Gha2013] S. Gharibian. “Approximation, Proof Systems, and Correlations in a Quantum World.” Ph.D. thesis, - (2013).
- [Gha2015] S. Gharibian, Y. Huang, Z. Landau, and S. W. Shin. “Quantum Hamiltonian Complexity.” *Foundations and Trends® in Theoretical Computer Science*, 10(3), pp. 159–282 (2015). URL <http://dx.doi.org/10.1561/0400000066>.
- [Gil2020] A. Gilyén and U. Vazirani. “(Sub)Exponential advantage of adiabatic quantum computation with no sign problem.” arXiv e-prints, arXiv:2011.09495 (2020). 2011.09495, URL <https://arxiv.org/abs/2011.09495>.
- [Gon2018] C. E. González-Guillén and T. S. Cubitt. “History-state Hamiltonians are critical.” arXiv e-prints, arXiv:1810.06528 (2018). 1810.06528, URL <https://arxiv.org/abs/1810.06528>.
- [Gro1996] L. Grover. “A fast quantum mechanical algorithm for database search.” In “STOC ’96: Proceedings of the twenty-eighth annual ACM symposium on Theory of computing,” pp. 212–219. ACM Press, New York, NY, USA (1996). URL <http://dl.acm.org/citation.cfm?id=237866>.
- [Has2013] M. B. Hastings and M. H. Freedman. “Obstructions To Classically Simulating The Quantum Adiabatic Algorithm.” *Quant. Inf. & Comp.*, 13, p. 1038 (2013). URL <http://arXiv.org/abs/1302.5733>.

- [Has2020] M. B. Hastings. “The Power of Adiabatic Quantum Computation with No Sign Problem.” arXiv e-prints, arXiv:2005.03791 (2020). URL <https://arxiv.org/abs/2005.03791>.
- [Hen2014] I. Hen. “Period finding with adiabatic quantum computation.” EPL (Europhysics Letters), 105(5), p. 50005 (2014). URL <https://doi.org/10.1209%2F0295-5075%2F105%2F50005>.
- [Hor2017] L. Hormozi, E. W. Brown, G. Carleo, and M. Troyer. “Nonstoquastic Hamiltonians and quantum annealing of an Ising spin glass.” Phys. Rev. B, 95, p. 184416 (2017). URL <https://link.aps.org/doi/10.1103/PhysRevB.95.184416>.
- [Jan2007] S. Jansen, M.-B. Ruskai, and R. Seiler. “Bounds for the adiabatic approximation with applications to quantum computation.” J. Math. Phys., 48(10), p. 102111 (2007). URL <http://scitation.aip.org/content/aip/journal/jmp/48/10/10.1063/1.2798382>.
- [Jar2016] M. Jarret, S. P. Jordan, and B. Lackey. “Adiabatic optimization versus diffusion Monte Carlo methods.” Phys. Rev. A, 94, p. 042318 (2016). URL <https://link.aps.org/doi/10.1103/PhysRevA.94.042318>.
- [Jar2018] M. Jarret, B. Lackey, A. Liu, and K. Wan. “Quantum adiabatic optimization without heuristics.” arXiv e-prints, arXiv:1810.04686 (2018). URL <https://arxiv.org/abs/1810.04686>.
- [Jia2017] Z. Jiang and E. G. Rieffel. “Non-commuting two-local Hamiltonians for quantum error suppression.” Quantum Information Processing, 16(4), p. 89 (2017). URL <https://doi.org/10.1007/s11128-017-1527-9>.
- [Jor2006] S. P. Jordan, E. Farhi, and P. W. Shor. “Error-correcting codes for adiabatic quantum computation.” Phys. Rev. A, 74, p. 052322 (2006). URL <https://link.aps.org/doi/10.1103/PhysRevA.74.052322>.
- [Jor2010] S. P. Jordan, D. Gosset, and P. J. Love. “Quantum-Merlin-Arthur-complete problems for stoquastic Hamiltonians and Markov matrices.” Phys. Rev. A, 81, p. 032331 (2010). URL <https://link.aps.org/doi/10.1103/PhysRevA.81.032331>.
- [Kad1998] T. Kadowaki and H. Nishimori. “Quantum annealing in the transverse Ising model.” Phys. Rev. E, 58, pp. 5355–5363 (1998). URL <https://link.aps.org/doi/10.1103/PhysRevE.58.5355>.
- [Kat1950] T. Kato. “On the Adiabatic Theorem of Quantum Mechanics.” Journal of the Physical Society of Japan, 5(6), pp. 435–439 (1950). URL <https://doi.org/10.1143/JPSJ.5.435>.
- [Kin2019] J. King, M. Mohseni, W. Bernoudy, A. Fréchette, H. Sadeghi, S. V. Isakov, H. Neven, and M. H. Amin. “Quantum-Assisted Genetic Algorithm.” arXiv e-prints, arXiv:1907.00707 (2019). URL <https://arxiv.org/abs/1907.00707>.
- [Kin2021] A. D. King, J. Raymond, T. Lanting, S. V. Isakov, M. Mohseni, G. Poulin-Lamarre, S. Ejtemaei, W. Bernoudy, I. Ozfidan, A. Y. Smirnov, M. Reis, F. Altomare, M. Babcock, C. Baron, A. J. Berkley, K. Boothby, P. I. Bunyk, H. Christiani, C. Enderud, B. Evert, R. Harris, E. Hoskinson, S. Huang, K. Jooya, A. Khodabandou, N. Ladizinsky, R. Li, P. A. Lott, A. J. R. MacDonald, D. Marsden, G. Marsden, T. Medina, R. Molavi, R. Neufeld, M. Norouzpour, T. Oh, I. Pavlov, I. Perminov, T. Prescott, C. Rich, Y. Sato, B. Sheldan, G. Sterling, L. J. Swenson, N. Tsai, M. H. Volkmann, J. D. Whittaker, W. Wilkinson, J. Yao, H. Neven, J. P. Hilton, E. Ladizinsky, M. W.

- Johnson, and M. H. Amin. “Scaling advantage over path-integral Monte Carlo in quantum simulation of geometrically frustrated magnets.” *Nature Communications*, 12(1), p. 1113 (2021). URL <https://doi.org/10.1038/s41467-021-20901-5>.
- [Kit2002] A. Y. Kitaev, A. H. Shen, and M. N. Vyalyi. *Classical and Quantum Computation*. American Mathematical Society, Boston, MA, USA (2002).
- [Kla1979] J. R. Klauder. “Path integrals and stationary-phase approximations.” *Phys. Rev. D*, 19, pp. 2349–2356 (1979). URL <https://link.aps.org/doi/10.1103/PhysRevD.19.2349>.
- [Kon2017] L. Kong and E. Crosson. “The performance of the quantum adiabatic algorithm on spike Hamiltonians.” *International Journal of Quantum Information*, 15(02), arXiv:1511.06991 (2017). <https://doi.org/10.1142/S0219749917500113>, URL <https://doi.org/10.1142/S0219749917500113>.
- [Lan2014] T. Lanting, A. J. Przybysz, A. Y. Smirnov, F. M. Spedalieri, M. H. Amin, A. J. Berkley, R. Harris, F. Altomare, S. Boixo, P. Bunyk, N. Dickson, C. Enderud, J. P. Hilton, E. Hoskinson, M. W. Johnson, E. Ladizinsky, N. Ladizinsky, R. Neufeld, T. Oh, I. Perminov, C. Rich, M. C. Thom, E. Tolkacheva, S. Uchaikin, A. B. Wilson, and G. Rose. “Entanglement in a Quantum Annealing Processor.” *Phys. Rev. X*, 4, p. 021041 (2014). URL <https://link.aps.org/doi/10.1103/PhysRevX.4.021041>.
- [Lid2019] D. A. Lidar. “Lecture Notes on the Theory of Open Quantum Systems.” arXiv e-prints, arXiv:1902.00967 (2019). URL <https://arxiv.org/abs/1902.00967>.
- [Llo2018] S. Lloyd. “Quantum approximate optimization is computationally universal.” arXiv e-prints, arXiv:1812.11075 (2018). URL <https://arxiv.org/abs/1812.11075>.
- [Mar2002] R. Martoňák, G. E. Santoro, and E. Tosatti. “Quantum annealing by the path-integral Monte Carlo method: The two-dimensional random Ising model.” *Phys. Rev. B*, 66, p. 094203 (2002). URL <https://link.aps.org/doi/10.1103/PhysRevB.66.094203>.
- [Mar2017] M. Marvian and D. A. Lidar. “Error Suppression for Hamiltonian-Based Quantum Computation Using Subsystem Codes.” *Phys. Rev. Lett.*, 118, p. 030504 (2017). URL <https://link.aps.org/doi/10.1103/PhysRevLett.118.030504>.
- [Mar2019] M. Marvian and S. Lloyd. “Robust universal Hamiltonian quantum computing using two-body interactions.” arXiv e-prints, arXiv:1911.01354 (2019). URL <https://arxiv.org/abs/1911.01354>.
- [Mut2016] S. Muthukrishnan, T. Albash, and D. A. Lidar. “Tunneling and Speedup in Quantum Optimization for Permutation-Symmetric Problems.” *Phys. Rev. X*, 6, p. 031010 (2016). URL <https://link.aps.org/doi/10.1103/PhysRevX.6.031010>.
- [Mut2019] S. Muthukrishnan, T. Albash, and D. A. Lidar. “Sensitivity of quantum speedup by quantum annealing to a noisy oracle.” *Phys. Rev. A*, 99, p. 032324 (2019). URL <https://link.aps.org/doi/10.1103/PhysRevA.99.032324>.
- [Nel2021] J. Nelson, M. Vuffray, A. Y. Lokhov, and C. Coffrin. “Single-Qubit Fidelity Assessment of Quantum Annealing Hardware.” arXiv e-prints, arXiv:2104.03335 (2021). 2104.03335.

- [Ohk2018] M. Ohkuwa, H. Nishimori, and D. A. Lidar. “Reverse annealing for the fully connected  $p$ -spin model.” Phys. Rev. A, 98, p. 022314 (2018). URL <https://link.aps.org/doi/10.1103/PhysRevA.98.022314>.
- [Pag2020] G. Pagano, A. Bapat, P. Becker, K. S. Collins, A. De, P. W. Hess, H. B. Kaplan, A. Kyprianidis, W. L. Tan, C. Baldwin, L. T. Brady, A. Deshpande, F. Liu, S. Jordan, A. V. Gorshkov, and C. Monroe. “Quantum approximate optimization of the long-range Ising model with a trapped-ion quantum simulator.” Proceedings of the National Academy of Sciences, 117(41), pp. 25396–25401 (2020). <https://www.pnas.org/content/117/41/25396.full.pdf>, URL <https://www.pnas.org/content/117/41/25396>.
- [PO2011] A. Perdomo-Ortiz, S. E. Venegas-Andraca, and A. Aspuru-Guzik. “A study of heuristic guesses for adiabatic quantum computation.” Quantum Information Processing, 10(1), pp. 33–52 (2011). URL <https://doi.org/10.1007/s11128-010-0168-z>.
- [Rei2004] B. W. Reichardt. “The Quantum Adiabatic Optimization Algorithm and Local Minima.” In “Proceedings of the Thirty-sixth Annual ACM Symposium on Theory of Computing,” STOC ’04, pp. 502–510. ACM, New York, NY, USA (2004). URL <http://doi.acm.org/10.1145/1007352.1007428>.
- [Rol2002] J. Roland and N. J. Cerf. “Quantum search by local adiabatic evolution.” Phys. Rev. A, 65(4), pp. 042308– (2002). URL <http://link.aps.org/doi/10.1103/PhysRevA.65.042308>.
- [Røn2014] T. F. Rønnow, Z. Wang, J. Job, S. Boixo, S. V. Isakov, D. Wecker, J. M. Martinis, D. A. Lidar, and M. Troyer. “Defining and detecting quantum speedup.” Science, 345(6195), pp. 420–424 (2014). URL <https://science.sciencemag.org/content/345/6195/420>.
- [San2002] G. E. Santoro, R. Martoňák, E. Tosatti, and R. Car. “Theory of Quantum Annealing of an Ising Spin Glass.” Science, 295(5564), pp. 2427–2430 (2002). URL <https://science.sciencemag.org/content/295/5564/2427>.
- [Sek2012] Y. Seki and H. Nishimori. “Quantum annealing with antiferromagnetic fluctuations.” Phys. Rev. E, 85, p. 051112 (2012). URL <https://link.aps.org/doi/10.1103/PhysRevE.85.051112>.
- [Shi2014] S. W. Shin, G. Smith, J. A. Smolin, and U. Vazirani. “How ‘Quantum’ is the D-Wave Machine?” arXiv e-prints, arXiv:1401.7087 (2014). URL <https://arxiv.org/abs/1401.7087>.
- [Som1991] R. L. Somorjai. “Novel approach for computing the global minimum of proteins. 1. General concepts, methods, and approximations.” The Journal of Physical Chemistry, 95(10), pp. 4141–4146 (1991). URL <http://pubs.acs.org/doi/abs/10.1021/j100163a045>.
- [Som2012] R. D. Somma, D. Nagaj, and M. Kieferová. “Quantum Speedup by Quantum Annealing.” Phys. Rev. Lett., 109(5), pp. 050501– (2012). URL <http://link.aps.org/doi/10.1103/PhysRevLett.109.050501>.
- [vD2001] W. van Dam, M. Mosca, and U. Vazirani. “How powerful is adiabatic quantum computation?” In “Proceedings 42nd IEEE Symposium on Foundations of Computer Science,” pp. 279–287 (2001). URL <https://doi.org/10.1109/SFCS.2001.959902>.
- [Vuf2020] M. Vuffray, C. Coffrin, Y. A. Kharkov, and A. Y. Lokhov. “Programmable Quantum Annealers as Noisy Gibbs Samplers.” arXiv e-prints, arXiv:2012.08827 (2020). 2012.08827.

- [You2008] A. P. Young, S. Knysh, and V. N. Smelyanskiy. “Size Dependence of the Minimum Excitation Gap in the Quantum Adiabatic Algorithm.” *Phys. Rev. Lett.*, 101, p. 170503 (2008). URL <https://link.aps.org/doi/10.1103/PhysRevLett.101.170503>.
- [You2010] A. P. Young, S. Knysh, and V. N. Smelyanskiy. “First-Order Phase Transition in the Quantum Adiabatic Algorithm.” *Phys. Rev. Lett.*, 104, p. 020502 (2010). URL <https://link.aps.org/doi/10.1103/PhysRevLett.104.020502>.
- [You2013] K. C. Young, R. Blume-Kohout, and D. A. Lidar. “Adiabatic quantum optimization with the wrong Hamiltonian.” *Phys. Rev. A*, 88, p. 062314 (2013). URL <https://link.aps.org/doi/10.1103/PhysRevA.88.062314>.
- [Zho2020] L. Zhou, S.-T. Wang, S. Choi, H. Pichler, and M. D. Lukin. “Quantum Approximate Optimization Algorithm: Performance, Mechanism, and Implementation on Near-Term Devices.” *Phys. Rev. X*, 10, p. 021067 (2020). URL <https://link.aps.org/doi/10.1103/PhysRevX.10.021067>.