



Figure 1: Since the first experimental violation of a Bell’s inequality in 1982 [2], there have been several efforts to violate the inequality with a variety of systems. Photonic systems (Green circles) have, so far, been the most successful. Systems comprising of atoms, ions, and atoms and photons (Blue diamonds) have also been studied. Bell violations have also been demonstrated with Josephson junctions (Pink square) and NV centers in diamond (Orange triangle).

References

- [1] Markus Ansmann, H. Wang, Radoslaw C. Bialczak, Max Hofheinz, Erik Lucero, M. Neeley, A. D. O’Connell, D. Sank, M. Weides, J. Wenner, A. N. Cleland, and John M. Martinis. Violation of bell’s inequality in josephson phase qubits. *Nature*, 461(7263):504–506, September 2009.
- [2] Alain Aspect, Philippe Grangier, and Gérard Roger. Experimental realization of einstein-podolsky-rosen-bohm gedankenexperiment: A new violation of bell’s inequalities. *Phys. Rev. Lett.*, 49:91–94, Jul 1982.
- [3] B. G. Christensen, K. T. McCusker, J. B. Altepeter, B. Calkins, T. Gerrits, A. E. Lita, A. Miller, L. K. Shalm, Y. Zhang, S. W. Nam, N. Brunner, C. C. W. Lim, N. Gisin, and P. G. Kwiat. Detection-loophole-free test of quantum nonlocality, and applications. *Phys. Rev. Lett.*, 111:130406, Sep 2013.
- [4] B R Gadway, E J Galvez, and F De Zela. Bell-inequality violations with single photons entangled in momentum and polarization. *Journal of Physics B: Atomic, Molecular and Optical Physics*, 42(1):015503, 2009.
- [5] Paul G. Kwiat, Klaus Mattle, Harald Weinfurter, Anton Zeilinger, Alexander V. Sergienko, and Yanhua Shih. New high-intensity source of polarization-entangled photon pairs. *Phys. Rev. Lett.*, 75:4337–4341, Dec 1995.

- [6] G. Lima, G. Vallone, A. Chiuri, A. Cabello, and P. Mataloni. Experimental bell-inequality violation without the postselection loophole. *Phys. Rev. A*, 81:040101, Apr 2010.
- [7] D. N. Matsukevich, P. Maunz, D. L. Moehring, S. Olmschenk, and C. Monroe. Bell inequality violation with two remote atomic qubits. *Phys. Rev. Lett.*, 100:150404, Apr 2008.
- [8] D. L. Moehring, M. J. Madsen, B. B. Blinov, and C. Monroe. Experimental bell inequality violation with an atom and a photon. *Phys. Rev. Lett.*, 93:090410, Aug 2004.
- [9] Mohamed Nawareg, Fabrizio Bisesto, Vincenzo D’Ambrosio, Elias Amselem, Fabio Sciarrino, Mohamed Bourennane, and Adan Cabello. Bounding quantum theory with the exclusivity principle in a two-city experiment. *Arxiv*, arXiv:1311.3495, 2013.
- [10] Wolfgang Pfaff, Tim H. Tamini, Lucio Robledo, Hannes Bernien, Matthew Markham, Daniel J. Twitchen, and Ronald Hanson. Demonstration of entanglement-by-measurement of solid-state qubits. *Nat Phys*, 9(1):29–33, January 2013.
- [11] M. A. Rowe, D. Kielpinski, V. Meyer, C. A. Sackett, W. M. Itano, C. Monroe, and D. J. Wineland. Experimental violation of a bell’s inequality with efficient detection. *Nature*, 409(6822):791–794, February 2001.
- [12] W. Tittel, J. Brendel, H. Zbinden, and N. Gisin. Violation of bell inequalities by photons more than 10 km apart. *Phys. Rev. Lett.*, 81:3563–3566, Oct 1998.
- [13] Us. Our value. *N/a*, 2014.
- [14] Gregor Weihs, Thomas Jennewein, Christoph Simon, Harald Weinfurter, and Anton Zeilinger. Violation of bell’s inequality under strict einstein locality conditions. *Phys. Rev. Lett.*, 81:5039–5043, Dec 1998.
- [15] Timothy Yarnall, Ayman F. Abouraddy, Bahaa E. A. Saleh, and Malvin C. Teich. Experimental violation of bell’s inequality in spatial-parity space. *Phys. Rev. Lett.*, 99:170408, Oct 2007.