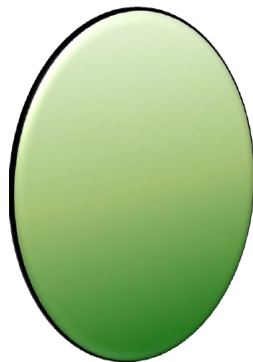


Quantum computing: from theory towards technology

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Technology



Mathematical
models



Using a single-electron two-slit experiment as an example, I discuss some conflicting views about what quantum theory really tells us about microscopic phenomena and quantum computation in particular. Then I give a brief review of the current efforts to build devices that operate according to the laws of quantum theory and may be used for computation. In the last part of the talk I present results of our benchmarks of the IBM- Quantum experience (1) and the D-Wave quantum annealer (2).

1. K. Michielsen, M. Nocon, D. Willsch, F. Jin, T. Lippert, H. De Raedt, "Benchmarking gate-based quantum computers", <https://doi.org/10.1016/j.cpc.2017.06.011>
2. K. Michielsen, F. Jin, and H. De Raedt, "Solving 2-satisfiability problems on a quantum annealer", (in preparation)