D-Wave Experimental Group Introduction

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Active Research: D-Wave Quantum Annealing Processors



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Active Research: Quantum Ising Spin (QIS)



Binary information encoded in flux basis: $|0\rangle \rightarrow |\downarrow\rangle$ and $|1\rangle \rightarrow |\uparrow\rangle$

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Active Research: Quantum Annealing (QA)



Active Research: Spectroscopy During QA



Research of Interest

Research of Interest: Phase Diagrams



Katzgraber, Hamze, and Andrist, PRX 4, 021008 (2014).

Research of Interest

Research of Interest: Phase Diagrams



• p-T- Δ phase diagram for interesting problem classes.

- Error encoding for quantum annealing.
- Alternate (universal?) problem Hamiltonians.
- Quantum computation models other than quantum annealing.
- Quantum computation in physical systems other than superconducting circuits.

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