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Title:

Quantum simulation by quantum annealing

Abstract:

After a brief overview of the status of quantum simulation by quantum annealing, we describe our recent two quantum simulations using the D-Wave quantum annealers for the Kibble-Zurek mechanism on the defect formation in phase transitions and the Griffiths-McCoy singularity for diluted random magnet. These experiments clarify capabilities and limitations of quantum simulation by the current quantum annealers and suggest the desirable directions of future developments in the hardware and theory.