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Title: Open-system Kibble-Zurek Mechanism in a Quantum Annealer

Abstract:

In this talk, we report the Kibble-Zurek mechanism on the formation of topological defects with the one-dimensional transverse Ising model in a quantum annealing device. Our experimental, numerical, or analytical results demonstrate that the theory of defect formation in a closed system can be established even in an open system like current quantum annealers. Our works would provide new directions of quantum simulation by using quantum annealers.