

Day 3

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Title: Variational counter diabatic drivings in rotating frames

Abstract:

Counter diabatic (CD) drivings have been recently advocated as a tool to enhance the performance of quantum annealing. However, most CD-based approaches require adding new terms to the original quantum annealing Hamiltonian, which can be experimentally challenging. Starting from the variational approach of Sels and Polkovnikov [Proc. Natl. Acad. Sci. 114, 3909 (2017)], we present a systematic method to find new annealing schedules, which implement approximate CD drivings in rotating frames without adding new terms to the original Hamiltonian. We illustrate the technique within the recently proposed parity quantum optimization scheme [Sci. Adv. 1, e1500838 (2015)].