Towards a measureable pathway for learning quantum annealing
ELIZABETH BEHRMAN, JAMES STECK, Wichita State Univ — In previous work, we have proposed and developed an algorithm for quantum annealing machines, to expand their repertoire using systematic quantum control via machine learning. Current technologies limit measurement of the states of these machines to determination of the average spin at each site. We therefore construct a “broken pathway” between the initial and the desired states, at each step of which the average spins are nonzero, and show successful learning of that pathway. Using this technique we show we can direct annealing to multiqubit GHZ states and W states. The procedure is robust to noise and decoherence.

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