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ROBUSTNESS OF QUANTUM WALK SEARCH WITH NEIGHBORS MEASUREMENT

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Here we study the robustness of two modifications of quantum walk search algorithm on hypercube. In the first previously suggested modification, on each even iteration only quantum walk is applied. And in the second, the closest neighbors of the solution are measured classically. In this work we study the robustness of those two modifications when the traversing coin is constructed by both generalized Householder reflection and an additional phase multiplier. We investigate the stability of the algorithm to deviations in those phases.

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