

Direct Collocation for Quantum Optimal Control

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Abstract

We present an adaptation of the *direct collocation* trajectory optimization method for problems in quantum optimal control (QOC). This approach addresses several limitations of standard QOC methods, including the ability to solve minimum time problems, a crucial objective for realizing high-performance quantum computers. We demonstrate that this approach leads to improved performance on simulated systems as well as on nascent hardware devices.

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0 Introduction