

Abstract Submitted  
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**Using Euclidean Lattice Field Theory for Efficient Quantum Simulation of a  $Z_2$  Gauge Theory** ERIK GUSTAFSON, University of Iowa, HENRY LAMM, Fermilab — Preparing strongly-coupled states on quantum computers requires large resources. In this work, we show how classical sampling coupled with projection operators can be used to compute Minkowski matrix elements without explicitly preparing these states on the quantum computer. We demonstrate this for the 2+1d  $Z_2$  lattice gauge theory. We show that this algorithm is competitive with adiabatic state preparation.

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