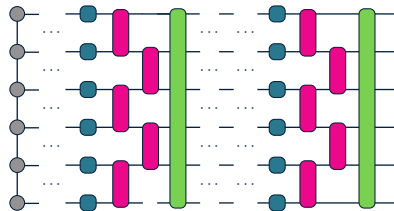


How Can We Use Current Quantum Systems?

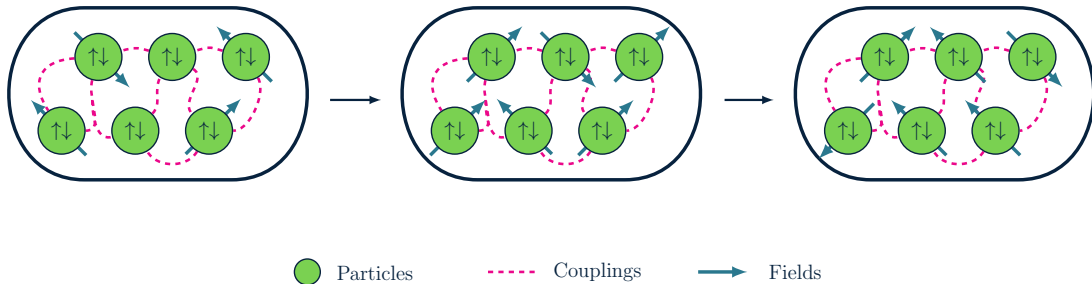
Matthew Dushenes*, Juan Carrasquilla, Raymond Laflamme
University of Waterloo, Institute for Quantum Computing, & Vector Institute

May 15, 2023

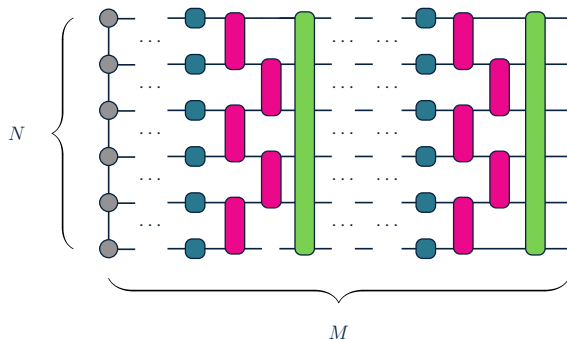
Girls in Quantum



What Are We Able To Do With Current Quantum Systems?

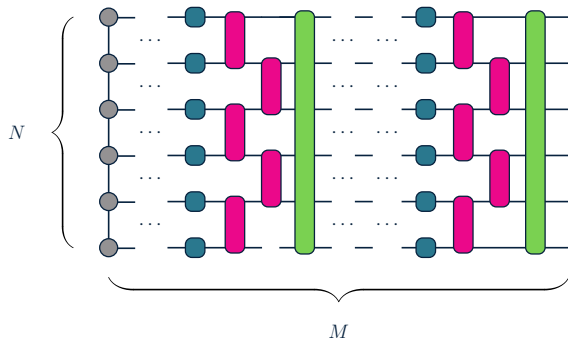


How Do Circuit Depth And Noise Affect Our Capabilities?



How does the amount of *noise* γ and the *evolution depth* M
of a *constrained* system
affect its classical simulation and optimization?

How Do Circuit Depth And Noise Affect Our Capabilities?



How can we leverage approaches from
quantum mechanics and *machine learning* to describe these relationships?