

# Quantum Cellular Automata

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In order to simulate quantum systems efficiently, we ought to use quantum systems. The framework of Quantum Cellular Automata (QCA), including Quantum Walks, is a strategic for quantum simulation. First, because QCA constitute a privileged mathematical setting in which to discretize the quantum system to be simulated. Secondly, because they constitute a promising architecture for quantum simulation devices. Last, because the imperfections of of the quantum simulation devices are more likely to map onto the natural noise models of the simulated quantum phenomena. I will review a number of theoretical results on quantum simulation with QCA.