

Many Body Physics in Superconducting Devices (25+5)

How can quantum field theory advance superconducting device capabilities? How can superconducting devices probe quantum field theory? I will discuss these questions in the context of recent work on fluxonium, a superconducting quantum circuit used as a qubit. I will present a numerical framework for optimizing qubits, as well as a lattice field theory of physical devices. The discussion around these two applications identifies several compelling opportunities for quantum field theory to advance device physics.

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