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Superconducting Qubits Coupled to Resonant Cavities: Quantum Optics on a Chip

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Abstract

The idea of using superconducting circuits to act as artificial atoms, and coupling them to microwave transmission line resonators/cavities has come a long way since its first realization in 2004. This architecture, termed circuit quantum electrodynamics (QED), probes regimes of cavity QED which cannot be realized in conventional cavity QED and has opened a new testbed for the understanding of driven open quantum systems. In this talk, I will give an introduction to the basics of circuit QED, a discussion of recent results and some future predictions.