

Circuit quantum electrodynamics with quantum dot qubits

Jonne V. Koski

*ETH Zurich, Laboratory for Solid State Physics, Otto-Stern-Weg 1, 8093, Zurich,
Switzerland*

Utilizing single electrons in quantum dot devices as qubits is appealing due to the readily available knowledge on industry-scale semiconductor fabrication. In particular, electron spins are promising candidates for storing quantum information due to their long coherence time. To scale up the number of qubits, it is desirable to enable long-range interaction between qubits, for example by using virtual photons as quantum information mediators in a circuit quantum electrodynamics (cQED) platform. This talk will cover our recent work on this topic, focusing on the demonstration of strong coupling between a single microwave photon in GaAs triple quantum dots.