

Research and Development of superconducting quantum devices in SKKU Quantum Fab

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Abstract:

In this presentation I will introduce SKKU QFab, a superconducting quantum foundry for quantum device research. As one of our main research, we introduce our activities in the development of superconducting qubit device technology targeting a quantum processor, as a part of a large nationwide project to build a scalable quantum computer system. The superconducting qubit emerges as a very promising platform for realizing a useful quantum computing system. The qubit device is based on Josephson junctions and superconducting resonators, which is already relatively mature technology reaching a level of commercial device fabrication. Especially we have established a state-of-art superconducting device foundry QFab to provide the researchers with qubit devices with relatively small qubit counts. The device technology still needs a far more improvement for practical quantum computing. In general, I will present the current status and future direction of SKKU QFab and superconducting quantum processor research.