Quantum Computing with Superconducting Qubits

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Quantum computers hold promise for solving problems that are intractable with classical computers. Superconducting qubits have been one of the most promising platforms for practical quantum computing. Over the last two decades, tremendous advances have been made in this research field, where the coherence time of qubits and quantum gate fidelity have been improved several orders of magnitude. Led by big tech companies, the world is racing to build a useful quantum computer and to search for applications where quantum computers could outperform classical computers. In this talk, I'll give introduction to quantum computing and superconducting qubits, including quantum control and measurement of qubits. Also, I'll present our ongoing efforts in KRISS on building 20-qubit superconducting qubit system.