

## Title: High-Coherence Fluxonium Superconducting Qubit

### Abstract:

Quantum superconducting circuits based on Josephson tunnel junctions have become a leading platform in the subjects of quantum information. By inserting a Josephson junction array served as an inductance, a fluxonium superconducting qubit has several extraordinary properties including extra degree of freedom for engineering, tunable multi-level spectrum with large anharmonicity. In this talk, I will present most recent results of superconducting fluxonium qubits with coherence times largely limited by energy relaxation and reproducibly satisfying  $T_2^{\text{echo}} > 100\mu\text{s}$ . I will also discuss how the unique to fluxonium combination of long coherence time and large anharmonicity can benefit on building hardware for quantum information science.