Superconducting & Hybrid Quantum Systems Research at Rome Lab
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The Quantum Information Sciences (QIS) branch at the Air Force Research Laboratory’s Information Directorate (Rome Labs) performs cutting-edge experimental and theoretical research in a multitude of topics at the frontiers of quantum computing and quantum networking. Conducted in support of Air Force strategic objectives in quantum information processing and entanglement distribution, the QIS branch has numerous active research efforts in quantum algorithms and quantum technologies such as trapped-ion systems, integrated quantum photonics, superconducting quantum circuitry, and heterogeneous quantum interfaces. In this talk, I will first give an overview of the portfolio of quantum research at Rome Labs and outline Air Force objectives in developing quantum technologies. Attention will then focus on efforts to develop a superconducting qubit platform with hybrid quantum interconnects for integration with future quantum networking architectures. In the end, I will highlight plans to establish a quantum networking testbed for fundamental investigations of entanglement distribution and heterogeneous network design at the recently opened Innovare Advancement Center.

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