***RESEARC PRORGAM**: Quantum Networks*

SENSOR NETWORKS
8. Quantum Sensing Protocol Optimization
8.A Quantum Sensing Protocol Optimization for Multiparameter Estimation in Sensor Network
8.B Optimizing Quantum Multiparameter Sensing in Distributed Sensor Networks:
A Unified Protocol-Stack and Performance-Bound Framework

QUANTUM MESUREMENTS
10.1 Imperfect Correlations and Information-Theoretic Limits of Quantum Measurement
10.2 Measurement and Inference in Classical and Quantum Sensor Networks: A Comparative Framework

QUANTUM NETWORKS SYNCHRONIZATION
11.1 Fundamental Limits of Entanglement-Free Synchronization in Open Quantum Networks
11.2 Definition and Quantification of Quantum Synchronization: An Operational and Engineering Perspective
11.3 Topology-Dependent Nonlinear Quantum Synchronization
11.4 Topology-Dependent Quantum Network Stability
11.5 Structural Stability and Robustness in Open Quantum Networks
11.6 Laplacian-Guided Actuator Design for Quantum Network Synchronization
11.7 Stochastic Spectral Stability and Robust Actuator Synthesis in Imperfect Quantum Networks
12.1 Adaptive Entanglement-Aware Routing in Multi-Hop Quantum Networks

QUANTUM NETWORK ROUTING
12.2 Distributed Probabilistic Multi-Commodity Adaptive Routing for Quantum Networks:
Capacity Characterization, Stability Guarantees, and Heavy-Traffic Optimality
12.3 Robust Learning-Augmented Routing in Time-Varying Quantum Networks:
Stability, Regret, and Heavy-Traffic Optimality
12.4 Congestion Control for Entanglement Distribution in Quantum Networks
12.5 Age of Entanglement: A Freshness Metric for Quantum Networks
12.6 Multi-Flow Quantum Networks: Capacity, Freshness, and Scheduling of Entanglement Flows
12.7 A Layered Framework for Entanglement Access Control in Quantum Networks

QUANTUM TRANSPORT LAYER PROTOCOL
12.8 QTCP — Quantum Transport Control Protocol
12.9 Distributed and Hierarchical Quantum Routing for Large-Scale Networks.
12.10 Latency–Decoherence Tradeoffs in Proactive Entanglement Distribution for Large-Scale Quantum Networks
12.11 Distributed Entanglement Scheduling in Multi-Domain Quantum Networks
12.12 Federated Learning for Quantum Network State Prediction:
A Discrete Event Systems Approach with Stability–Utility Trade-offs
12.13 Distributed QTCP with Federated Learning over Time-Varying Topology-Aware Multidomain Quantum Networks

QUANTUM PROTOCOL STACK OPTIMIZATION
12.14 On the Structure of Optimal Full-Stack Policies in Decoherence-Aware Quantum Network Protocol Stacks
12.15 Distributed Learning-Based Joint Optimization of Quantum Network Protocol Stacks with Decoherence-Aware Dynamics

12.16 Learning-Driven Predictive Cross-Layer Optimization for Time-Varying Quantum Networks
12.17 Belief-Aware Predictive Cross-Layer Optimization in Quantum Networks
12.17A Belief-Aware Predictive Cross-Layer Optimization in Quantum Networks

QUANTUM NETWORK CONTROL
12.17B Topology-Aware Predictive Control in Networked Quantum Systems: Spectral Scaling, Phase Transitions, and Graph-Structured Optimization
12.18 Learning-Augmented Predictive Control in Time-Varying Quantum Networks
12.19 Fundamental Limits of Information-Constrained Quantum Networking with Predictive Control

QUANTUM NETWORK CAPACITY
12.20 Fundamental Limits of Topology-Dependent Holevo Capacity in Imperfect Quantum Networks
12.21 Fundamental Limits of Topology-Dependent Holevo Capacity in Imperfect Quantum Networks with Error Correction
12.22 Topology-Aware Adaptive Quantum Error Correction for Time-Varying Quantum Networks: Theory and Performance Limits

QUANTUM NETWORK ON GRAPH
G1 Entanglement Graph Reconfiguration Under Noise: A Channel-Theoretic Framework for Quantum Network Topology Control
G2 Topology Aware Entanglement Graph Reconfiguration in Time Varying Quantum Networks
G3 Entanglement Graph Reconfiguration Under Noise: Foundations of Stochastic Topology Control in Quantum Networks

QUANTUM NETWORK INTELLIGENCE
G4 Cognitive Control of Time-Varying Topology for Adaptive Quantum Networks
G5 Heavy-Traffic Limits for Adaptive Quantum Networks with Dynamic Topology Control
G6 Fundamental Limits of Cognitive Congestion Control: Learning–Congestion Tradeoffs in Dynamic Quantum Networks
G7 Network Control Experience Management: A State-Space Framework for Intelligent Communication Networks
G7a Network Control Experience State and Management for Intelligent Communication Networks
G7b Experience-State Management: A Mathematical Framework for Adaptive Information Acquisition in Intelligent Communication Networks
G7c Designing Network Intelligence: A State-Space Framework for Intelligent Communication Networks
G7d Modeling the Network Thinking Process for Intelligent Communication Systems
G7e Distributed Experience-State Management for Multi-Domain Quantum Communication Networks