USC Viterbi
School of Engineering
Ming Hsieh Department of Electrical and Computer Engineering

Ming Hsieh Institute **Seminar Series**

Quantum Science & Technology

Quantum network based on color centers in diamond nanocavities

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Date: Thursday, September 7, 2023
Time: 2:00pm – 3:30pm
In-person: EEB 248

Abstract: Silicon Vacancy color centers in diamonds coupled to nanophotonic crystal cavities offer a promising platform for realizing quantum networks, combining long coherence times, efficient coupling to photons with high optical cooperativities, and on-chip scalability. In this talk, I will report on our recent progress toward the realization of such distributed quantum systems. In particular, I will describe experimental generation and long-lived storage of distributed entanglement across a two-node network separated by 40 km fiber. Finally, I will discuss potential applications of distributed entanglement, such as blind delegated computing and long-baseline interferometry.

Bio: Aziza is a postdoc at Harvard in the group of Mikhail Lukin. She did her PhD at the University of Chicago in groups of Jon Simon and David Schuster, working on the transduction of single optical to millimeter wave photons using Rydberg atoms in cavities. Aziza got a Bachelor's degree from Harvard University and an MPhil from the University of Cambridge, where she built an experiment for generating potassium-39 BEC in a uniform box potential.