Quantum Networking with a Multiplexed Atom-Cavity Node
KEVIN COX, US Army Research Lab, DAVID MEYER, ZACHARY CASTILLO, US Army Research Lab, University of Maryland, FREDRIK FATEMI, PAUL KUNZ, US Army Research Lab — We describe a system which utilizes the full state-space of an atomic ensemble using angular spin-wave multiplexing inside an optimized “asymmetric” ring cavity. This system opens the door to several important applications including multiplexed cavity QED, relatively fast quantum repeaters, and superradiant single-photon generation. I will present current progress on these fronts.