

Abstract Submitted
for the DAMOP19 Meeting of
The American Physical Society

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.

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Date submitted: 30 Jan 2019

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