

Title: Artificial Atoms for Scalable Quantum Networks

Abstract: A central challenge in quantum information processing is the development of coherently networked quantum memories. Such quantum networks serve as the foundation for applications including long-distance secure communications, distributed sensing, and distributed quantum computing. This talk will review recent advances in quantum networks based on artificial atom quantum memories connected via optical links. It will also consider how photonic integrated circuits technology can extend the reach and accelerate the generation of remote entanglement.

Bio: Dirk Englund received his BS in Physics from Caltech in 2002. Following a year at TU Eindhoven as a Fulbright Fellow, he earned his MS in EE and PhD in Applied Physics from Stanford University in 2008. He was a postdoctoral fellow at Harvard University until 2010, when he became Assistant Professor of E.E. and Applied Physics at Columbia University. He joined the MIT EECS faculty in 2013. Recent recognitions include the 2011 PECASE, the 2011 Sloan Fellowship in Physics, the 2012 DARPA Young Faculty Award, the 2017 ACS Photonics Young Investigator Award, and the OSA's 2017 Adolph Lomb Medal.