SCALABLE NETWORKS WITH NANOPHOTONIC QUANTUM MEMORIES

RALF RIEDINGER

Universität Hamburg, Institut für Laserphysik

A key challenge in quantum information processing is how to scale up the number of coherently interacting qubits. A modular approach is to connect numerous local quantum processors via photonic links - building a quantum network. I will present recent advances in the realization of a central component of this network, nanophotonic interfaces to quantum memories, and applications such as memory enhanced quantum communication.

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