

Quantum communication experiments with optical waveguide devices

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In the last decade, many significant progresses have been made in experimental quantum communication over optical fiber. To realize compact and stable quantum communication systems, a variety of optical waveguide devices are now being applied to quantum communication experiments. NTT is one of the first institutions that started using optical waveguide devices for quantum communication [1-4]. In this talk, we review our recent efforts to utilize optical waveguide technologies for advanced quantum communication experiments, including a demonstration of single photon buffer using a silicon photonic crystal waveguide [5], precise tuning of single photon frequency by the use of electro-optic modulator based on lithium niobate waveguide [6], and a measurement of high-dimensional time-bin states using delayed interferometers based on silica waveguides [7].

References

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