

Optical Quantum Computers with Quantum Teleportation

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We succeeded in the realization of unconditional quantum teleportation in 1998 [**Furusawa98**]. Then, we invented the scheme of teleportation-based quantum computing in 2013 [**Yokoyama13**]. In this scheme, we can multiplex quantum information in the time domain and we can build a large-scale optical quantum computer only with four squeezers, five-six beam splitters, and two optical delay lines [**Asavanant19**]. We built a real machine of optical quantum computer in Riken and put it on the cloud [**Yokoyama25**]. We will work on a neural network and Shor's algorithm with the real machine.

References

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