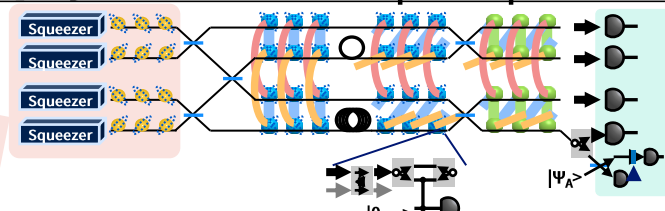
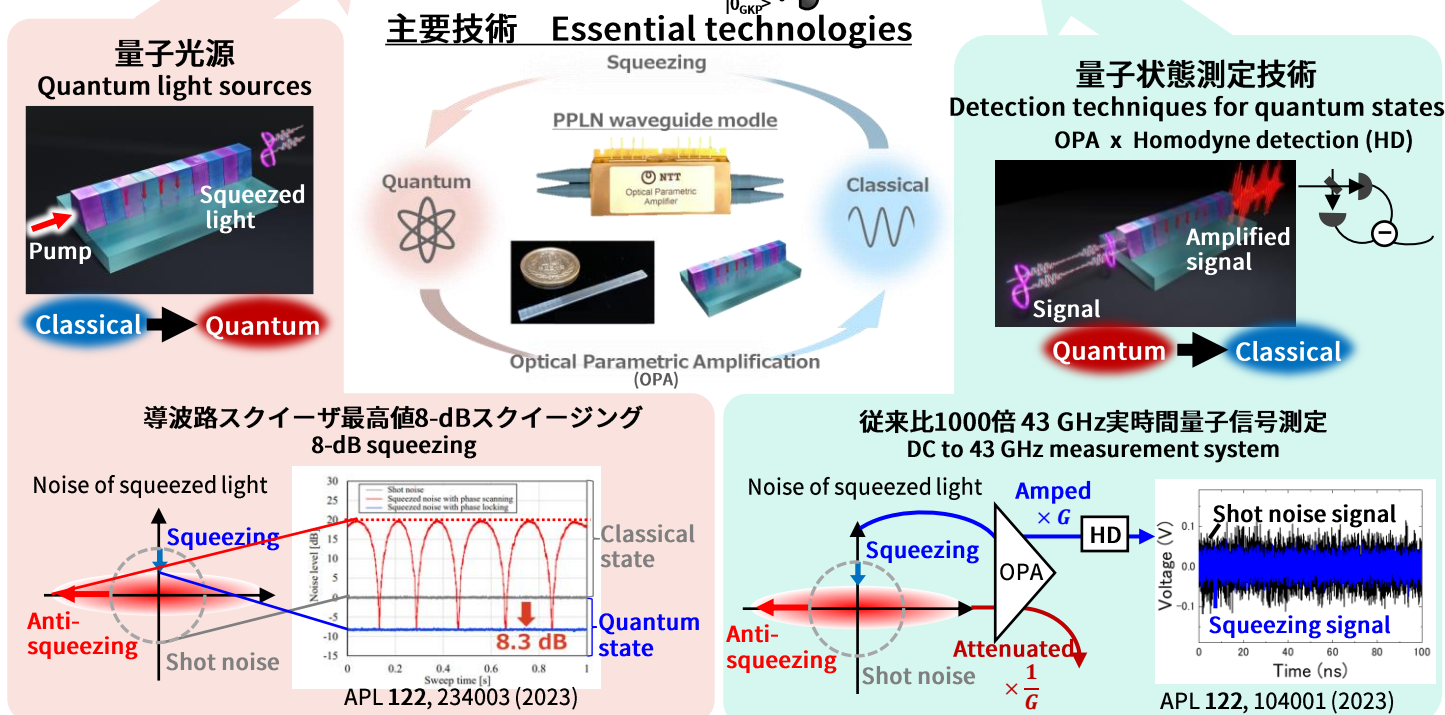


光通信と光量子の融合でめざす高速光量子コンピュータ Optical Devices for an Ultra-Fast Optical Quantum Computer

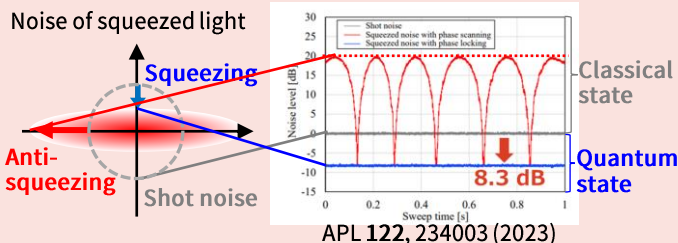
連続量光量子コンピュータ An optical quantum computer



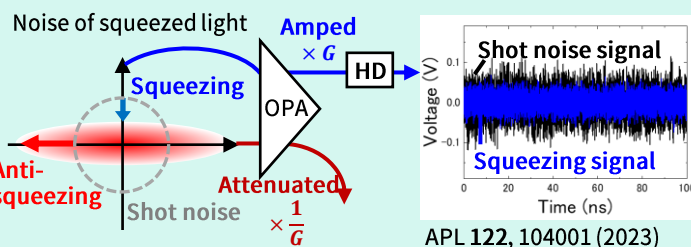
主要技術 Essential technologies



導波路スクイーズ最高値8-dBスクイージング 8-dB squeezing



従来比1000倍 43 GHz実時間量子信号測定 DC to 43 GHz measurement system



///Technical Issue

Optical devices that suppress quantum noise are eagerly awaited for large-scale quantum computers with continuous variables.

///Research Goal

A large-scale optical quantum computing machine with NTT's optical devices will be assembled, which will calculate 1000 times faster than conventional quantum ones.

---Technology

Developing fiber-coupled optical devices and ultra-fast detection techniques for quantum states by using NTT's processing technologies and optical device implementation techniques.

---Novelty

- Generating large-scale quantum entanglements at room temperature.
- Achieving the high-level quantum noise squeezing (8.3 dB) with THz-order bandwidth in quantum light sources.
- Achieving GHz-order real-time quantum-states measurement for the first time.

---Applicable Business

- Installing NTT's optical device to an optical quantum computing machine in racks by 2030 and on chips by 2050.
- In the information processing industry, having the potential to solve social issues which is difficult to calculate with conventional technologies.