

## Squeezed light generation at 1550nm

We report an experimental generation of squeezed light at 1550nm using a continuous-wave laser. An electric field noise reduction of 1.5 dB below the shot noise was observed. To generate squeezed light, we employed parametric down conversion (PDC) process where 775nm pump light is converted to 1550nm squeezed field. The 775nm pump was produced by second harmonic generation (SHG) in a single pass design. We made an optical parametric oscillator (OPO), the optical resonator where PDC process occurs. Homodyne detection was utilized to measure squeezed light. We plan to generate spatially multimode squeezed light by making a detuned self-imaging cavity. Spatially multimode squeezed light is more robust to mode mismatching than a single-mode squeezed light, so it can be applied to metrology like gravitational detection to reduce the mode mismatch loss.

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