

QComb - Multi-channel photon pair source

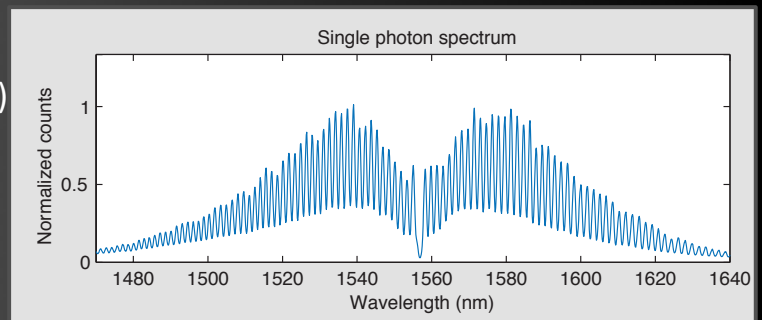
Ki3 PHOTONICS
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QComb generates, through resonant spontaneous four-wave mixing, photon pairs distributed over many frequency channels in the telecom wavelength band. The complete fiber-coupled system allows for turn-key and continuous long-term operation.

Key Features

- > 50 channels over S, C, L-band
- 200 GHz channel spacing (ITU grid)
- Hundred MHz photon bandwidth (i.e. nanosecond single-photon duration)
- Tunable single photon frequency (> 100 GHz)
- Frequency single-mode photons (no further spectral filtering needed)
- Heralded single photon source with ultra-high purity
- Pair production rate per channel pair > 100 kHz
- Pulsed or CW operation



Applications

- Quantum optics research
- Quantum information processing
- Quantum memories
- Quantum key distribution
- Quantum metrology and imaging

References:

- [1] C. Reimer et al. Science, 351, 1176 (2016)
- [2] P. Roztocki et al. Optics Express, 25 (16), 18940 (2017)

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