

Ultrabright Single Photon Source with Subnatural Linewidth

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Abstract: Using a monolithic doubly resonant parametric down-converter, we demonstrate an ultrabright source of subnatural linewidth, temporally long single photons at the rubidium D1 line. The single photons have a spectral brightness one order-of-magnitude higher than previously reported and a waveform controllable by electro-optic modulation. Applications to several areas of quantum communication, quantum memories, and quantum key distribution are possible.