

Quantum Physics

Correlated photon pairs generated from a warm atomic ensemble

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We present measurements of the cross-correlation function of photon pairs at 780 nm and 1367 nm, generated in a hot rubidium vapor cell. The temporal character of the biphoton is determined by the dispersive properties of the medium where the pair generation takes place. We show that short correlation times occur for optically thick samples, which can be understood in terms of off-resonant pair generation. By modifying the linear response of the sample, we produce near-resonant photon pairs, which could in principle be used for entanglement distribution.

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