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Quantum State Engineering using collective spin excitations

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Coherent scattering of photons in a dilute vapour of alkali atoms provides a strong link between the quantum information stored in the photonic and collective spin Hilbert spaces. In our lab we are looking at the mapping of photonic quantum states into and out of collective spins. By continuously scattering, we are creating highly correlated beams exhibiting EPR entanglement as well as quadrature and intensity squeezing below the standard quantum limit.

Keyword-1

quantum

Keyword-2

technology

Keyword-3

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