

Squeezing for BEC interferometers

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Spin-changing collisions can be employed for the generation of entanglement in spinor Bose-Einstein condensates, in close analogy to optical parametric down-conversion. I will present the creation of two types of entangled states – Twin-Fock states and two-mode squeezed states. Both states can be applied for interferometry beyond the Standard Quantum Limit. The entanglement is created in internal degrees of freedom. I will discuss methods to transfer the entanglement to external degrees of freedom.