



SFB/TRR 21 - Colloquium

13. Januar 2012, Ulm

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### Quantum Optical Interferometry with Photon Number Parity Measurements

I shall discuss the use of photon number parity measurements which, along with certain symmetric classes of entangled states of light, lead to Heisenberg-limited sensitivities in the detection of phase shifts via quantum optical interferometry. Heisenberg-limited sensitivities are the best allowed by quantum mechanics with linear phase shifts. I will also show that photon number parity measurements can be used to breach the Heisenberg limit for phase shifts generated by nonlinear interactions.

13. Januar 2012, 14:00 Uhr

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