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AG Theoretical Quantum Optics

Entanglement tests based on displaced photon-number correlations

Based on correlations of coherently displaced photon-numbers, we derive criteria to certify entanglement. These criteria are derived by means of solving a separability eigenvalue problem and they allow us to uncover bipartite and multipartite entanglement of complex states of light. Furthermore, we propose a measurement technique to directly detect the required observables. Remarkably, the entanglement, detected by our method, even persists in the presence of arbitrarily high, constant loss. In particular, we provide suitable, numerically optimized, entanglement witnesses for both two-mode and multimode states.

Talk: English

Slides: English

Location: Institute of Physics, Albert-Einstein-Str. 24, HS1