Howell, John C.; **Anisimov, Petr M.**; **Dowling, Jonathan P.**; **Boyd, Robert W.**

Single and biphoton imaging and high dimensional quantum communication. (English)

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Summary: Here, we present recent developments in the field of quantum imaging focusing on the high dimensionality aspects of single and biphoton imaging. We discuss some systems that have a "quantum advantage" over classical counterparts. We highlight some recent experiments in single-photon image discrimination, large alphabet quantum key distribution and image buffering.

MSC:

81P45 Quantum information, communication, networks (quantum-theoretic aspects)
81V80 Quantum optics
68U10 Computing methodologies for image processing
81P40 Quantum coherence, entanglement, quantum correlations

Keywords:

quantum optics; quantum communication; quantum imaging; slow light; entangled photons

Full Text: DOI

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