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Entangled Photon Quantum Key Distribution: Theory and Experiment ISRAEL OWENS, Los Alamos National Laboratory — Secure communications face growing challenges due to technological advances such as the anticipated arrival of quantum computers. Quantum key distribution offers a new method for the distribution of cryptographic key material that is secure against these challenges. I will describe a method of quantum key distribution that is based on using entangled photon pairs (EQKD). In particular, I will discuss and emphasize the key theoretical and experimental components of EQKD and the details of recent test-bed data results.

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