

Practical challenges in quantum cryptography

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Abstract: In this talk, we discuss the current landscape in quantum cryptography in the context of future quantum-safe communications and describe the state-of-the-art and practical challenges in this field. To illustrate these challenges, we focus in particular on recent practical photonic implementations, using encodings in discrete or continuous variables of light, of central quantum network protocols, enabling secret key distribution, quantum coin flipping, verification of entangled resources and transactions with quantum money, with maximal security guarantees.