

## Quantum Key Distribution Networking

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In Quantum Key Distribution (QKD) the laws of quantum physics guarantee a secure way of distributing keys which can in turn be used for exchange of information and authentication. Quantum cryptography being commercialized is considered as the most mature discipline among quantum technologies. On the other hand a lot of active research is going on in this area with the aim of increasing the distances among the secure nodes and also the number of the latter. In this talk, I am going to present the most celebrated QKD protocol, so called *BB84* protocol [1], one of its implementations using optical means and phase encoding [2] and finally recent proposals for increasing distance [3]. Then I will report on the progress of a project for implementing QKD in the fiber network of the University of Athens.

### References

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- [2] Ivan B. Djordjevic, “Physical-Layer Security and Quantum Key Distribution ”, Springer (2019).
- [3] M. Lucamarini, Z. L. Yuan, J. F. Dynes, and A. J. Shields, “Overcoming the rate distance limit of quantum key distribution without quantum repeaters”, Nat. **557**, 400 (2018).