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Quantum fingerprinting and hashing for information transfer and database searching

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Quantum fingerprinting is a family of quantum functions that began to be used in quantum algorithms in the early 2000s. They map classical objects to quantum states in such a way that different arguments can be effectively distinguished. To further highlight the additional cryptographic characteristics of quantum fingerprinting, our group uses the name "quantum hashing."

The talk presents the basic concepts of quantum fingerprinting and hashing, as well as their experimental implementation. Discusses a) the use of cryptographic signatures in protocols and b) efficient dictionary search algorithms.

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