The **Vienna Center for Quantum Science and Technology VCQ**

invites you to a

COLLOQUIUM TALK
by
Eleni Diamanti
(CNRS, Sorbonne University Paris)

Secure communications in quantum networks

Quantum technologies have the potential to improve in an unprecedented way the security and efficiency of communications in network infrastructures. We discuss the current landscape in quantum communication and cryptography, and focus in particular on recent photonic implementations, using encoding in discrete or continuous properties of light, of central quantum network protocols, enabling secret key distribution, verification of multiparty entanglement and transactions of quantum money, with security guarantees impossible to achieve with only classical resources. We also describe current challenges in this field and our efforts towards the miniaturization of the developed photonic systems, their integration into telecommunication network infrastructures, including with satellite links, as well as the practical demonstration of novel protocols featuring a quantum advantage for a wide range of tasks. These advances enrich the resources and applications of the emerging quantum networks that will play a central role in the context of future global-scale quantum-safe communications.

Monday, 15 January 2024
at Lise Meitner Lecture Hall at Universität Wien
Boltzmanngasse 5, 1090 Vienna, 1. OG

17:00 VCQ Student Talk by Joshua Morris
Planar search: Heuristic solver for rank constrained semidefinite programs

17:15 VCQ Colloquium talk by Eleni Diamanti

Host: Borivoje Dakić

There will be drinks and snacks after the talk!

Zoom link: https://vcq.quantum.at/colloquium-ws-23-24/