

6G-Quantum Communication Networks Workshop 2022

6gqc.eu



In the IEEE Global Communications Conference (GLOBECOM), the **6G-Quantum Communication Networks workshop (6GQC)** is the first workshop of the IEEE Communications Society dedicated to the integration between 6G networks and quantum communication networks. This will be pivotal in the mid-term horizon of 2030, when preliminary quantum communication networks and 6G will be both ready for their deployment. The convergence of such integration will have to come from both sides, with future development of classical network mindful that quantum technologies might become ready to interface with it, and with future development of quantum technologies mindful of the interface to existing and developing standards.

The goal of the workshop is to bring worldwide researchers investigating the integration and interworking between classical 6G and quantum future communication networks, to increase the awareness and inclusion of such issues in a timely manner, meaning before quantum technologies develop their own independent framework. The challenge is that, while the development of 6G networks might be too early for quantum technologies to be mature, the next horizon of 2040 might be too late, which justifies the added effort of investigating the integration of quantum technologies in 6G even though it is still unclear when quantum technologies will achieve maturity.

The main theme of the workshop is the integration between 6G and quantum communication networks.

The topics of interest are:

- quantum-assisted 6G network synchronization
- quantum-assisted distributed computing
- quantum-assisted machine learning for 6G continuum management and orchestration
- quantum-assisted physical-layer security
- merging technologies (e.g., optical switches that work both as classical or quantum devices)
- quantum Internet of Things
- 6G-quantum architecture and integration
- 6G-quantum protocol stack design
- quantum-6G physical layer service integration
- entanglement-assisted 6G communications
- quantum wireless communications for 6G high-altitude and aerial platforms
- quantum-6G protocols and applications
- 6G-quantum new KPIs and KVIs
- QoS and QoE in 6G-quantum communication networks.

Corona considerations: currently, the workshop is planned to be in presence, hosting authors' presentations, and allowing for interactions and networking among the participants. Nevertheless, if health and traveling rules and restrictions arise, the hybrid mode will also be considered and set up.

IMPORTANT DATES

Paper Submission Deadline: 15 July 2022

Paper Acceptance Notification: 1 September 2022

Camera-Ready: 1 October 2022

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