

Optical Networks and Systems Symposium

Symposium Co-Chairs

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Scope and Motivation

The continuing pandemic has further accelerated the already exploding demand for bandwidth everywhere. The need to connect synchronous video and audio applications, as well as asynchronous huge-data content applications, has become a critical need for an unprecedented number of users. Further, growth is not only generated by people but also by machines, towards a real implementation of the paradigm of the Internet of Everything. Finally, coupled with rapidly increasing use of Big Data and cloud-based services, this is resulting in progressively vast volumes of data being transported across networks. These trends not only contribute to the growth in data volumes, but also pose entirely new challenges related to end-to-end performance in terms of latency, reliability, energy efficiency, achievability for allowing the user to be connected reliably everywhere and every time. In addition, as quantum technology develops at unprecedented pace, existing optical networks are now required to provide support for services such as quantum key distribution (QKD) and distributed quantum computing. This poses new challenges across all network segments from the edge (fixed and optical wireless access) up to the core (backbone/optical backhaul) and also data centers, demanding substantial advances in optical systems and networks. Optical communications challenges in turn appear, involving the required evolution in fiber and wireless sides so as to support the challenges identified in the different network segments - while benefiting from recent paradigms such as Software Defined Networking, Network Infrastructure and Function Virtualization, Data Analytics and Artificial Intelligence, Cloud and Edge computing, and Optical Transmission Technologies. We invite original high-quality papers related to the latest research, development, and applications in these and other relevant areas of optical communication systems and networks.

Topics of Interest

The Optical Networks and Systems Symposium intends to showcase the latest developments in all research areas related to optical networks and systems. The Symposium cordially invites original contributions in, but not limited to, the following topical areas, plus others not explicitly listed but are closely related:

• Optical wireless and fibre systems & networks for 6G and beyond

- Optical networks in network function virtualization
- Virtualization and slicing in optical networks
- Artificial Intelligence and machine learning for optical systems and networks
- Optical access systems & networks in support of cost-effective edge compute deployment
- Experimental data-driven optical networking
- Data analytics for optical networks
- Optical interconnects for data centers
- Software-defined optical networks
- Quantum communication systems and networking
- Optical network security
- Optical network control and management
- Elastic, flexible rate, and flexi-grid optical networks
- Multi-band optical networks
- Optical network architectures, design, and performance evaluation
- Energy-efficient optical networks
- Optical network survivability and availability
- Optical network for inter- and intra-datacentre connectivity
- Optical interconnects for data centres & high-performance computing
- Optical network testbeds and experiments
- Optical wireless channel characterization
- Coding, modulation, and signal processing for optical systems
- OFDM and MIMO for optical systems
- Optical and wireless network convergence and mobile x-haul

Important Dates

Paper Submission: 15 April 2022 Notification: 25 July 2022 Camera Ready and Registration: 1 September 2022

How to Submit a Paper

All papers for technical symposia should be submitted via EDAS. Full instructions on how to submit papers are provided on the IEEE Globecom 2022 website: <u>https://globecom2022.ieee-globecom.org/</u>