

Call for Papers for Optical Networks and Systems (ONS) Symposium

Symposium Co-Chairs

Walter Cerroni
Krishna M. Sivalingam

University of Bologna, Italy, wcerroni@ieee.org
IIT Madras, Chennai, India, krishna.sivalingam@gmail.com

Submissions must be done through EDAS at <http://edas.info/N20753>

Scope and Motivation

The recent explosion of pervasive broadband devices (smartphones, tablets, etc.) and highly distributed applications and services (social networks, high-definition video streaming, cloud computing and storage services, multi-player on-line gaming, etc.) has kept the demand of bandwidth from both end-users and service providers increasing at exponential levels, bringing new challenges but also new opportunities to network infrastructure operators and equipment vendors. Optical communication technologies, which progressively evolved from the early deployments as simple point-to-point connections to complete networking solutions, represent the best candidate to cope with such huge traffic demands and with the consequent uprising of cost and energy consumption issues.

State-of-the-art optical networks and systems offer today effective solutions in different network segments, including access, metro and backbone networks, intra- and inter-datacenter networks, high-performance computing system interconnections, etc. Meanwhile, the emerging Software Defined Networking and Network Function Virtualization paradigms are completely reshaping the concept of networking, with a strong impact on flexibility and programmability requirements for optical network architectures, switching nodes and transmission systems. This continuously evolving scenario leads to a number of research and development challenges that still need to be addressed by the scientific community.

Main Topics of Interest

The Optical Networks and Systems Symposium intends to showcase the latest developments in all research areas related to optical networks and enabling systems. The topics of interest include, but are not limited to:

- Next generation optical network architecture design and performance evaluation
- Software defined optical networks
- Network function virtualization in optical networks
- Optical network infrastructures for cloud computing
- Optical inter- and intra-datacenter interconnections
- High-performance computing system optical interconnections
- Elastic and flexible grid optical networks
- Energy efficient/green optical networks and systems
- Optical network control and management
- Optical network security issues
- Multi-domain and multi-layer optical networks
- Traffic grooming and traffic engineering in optical networks
- Single-layer and multi-layer protection and restoration
- Optical switching technologies, devices, and architectures
- Hybrid optical packet/circuit switching techniques
- Optical cross-connects and add-drop multiplexers
- Optical access networks (PONs, AONs, and other FTTx architectures)
- Fiber-Wireless broadband access networks
- Physical-layer impairment-aware optical network design and traffic engineering
- Optical OFDM and coherent optical systems
- Coding, modulation, and signal processing in optical networks

- Dispersion and non-linearity management in optical networks
- Optical network resilience
- Optical storage networks
- Optical translucent networks
- Free space optical communications and networks
- Optical network demonstrators, test-beds and field trials
- Techno-economic issues in optical networks
- Standardization issues in optical networks

Co-Chairs Biographies



Walter Cerroni is an assistant professor of Communication Networks at the Department of Electrical, Electronic and Information Engineering, University of Bologna, Italy, from which he obtained his PhD in 2003. In 2008 he was a visiting assistant professor at the School of Information Sciences, University of Pittsburgh, Pennsylvania. In 1999 he was a visitor junior researcher at the University of Texas at Dallas, Texas, working in cooperation with the local branch of the Alcatel Corporate Research Center. His research interests include architectures and performance of next-generation programmable optical networks, network infrastructures for cloud computing, software defined networking and network function virtualization.

Walter Cerroni has co-authored about 100 articles, most of which published in conference proceedings (IEEE ICC, IEEE Globecom, OFC, ECOC, ONDM) and journals (JSAC, ComMag, CommLett, ComNet, OSN, PNET) relevant to optical networks and systems. He served as Publication Chair for the 15th International Conference on Optical Network Design and Modeling (ONDM 2011), Bologna, Italy, February 2011, technically co-sponsored by IEEE Communications Society, and the 1st IEEE Workshop on Software Defined Networks for Future Networks and Services (SDN4FNS 2013), Trento, Italy, November 2013, technically co-sponsored by IEEE Communications and Computer Societies.

He also served as a Technical Program Committee member for several international conferences, including IEEE Globecom, IEEE ICC, IEEE HPSR, IEEE FIE, ICNC, ONDM, and as a Reviewer for the following journals and magazines: IEEE Communications Letters, IEEE Communications Magazine, IEEE Journal on Selected Areas in Communications, IEEE/OSA Journal of Lightwave Technology, IEEE/OSA Journal of Optical Communications and Networking, IEEE Photonics Technology Letters, IEEE Transactions on Information Forensics and Security, IEEE Transactions on Communications, IEEE Transactions on Computers, IEEE Transactions on Wireless Communications, IET Communications, Elsevier Computer Communications, Elsevier Computer Networks, Elsevier Optical Switching and Networking, Springer Photonic Network Communications Journal.

He is an IEEE member since 2001.



Krishna M. Sivalingam is a Professor in the Department of CSE, IIT Madras, Chennai, INDIA. Previously, he was a Professor in the Dept. of CSEE at University of Maryland, Baltimore County, Maryland, USA; Associate Professor in the School of EECS at Washington State University, Pullman from 1997 until 2002; and Assistant Professor in the University of North Carolina Greensboro from 1994 until 1997. He has also conducted research at Lucent Technologies' Bell Labs in Murray Hill, NJ, and at AT&T Labs in Whippany, NJ. He received his Ph.D. and M.S. degrees in Computer Science from State University of New York at Buffalo in 1994 and 1990 respectively; and his B.E. degree in Computer Science and Engineering in 1988 from Anna University's College of Engineering Guindy, Chennai (Madras), India. While at SUNY Buffalo, he was a Presidential

Fellow from 1988 to 1991.

His research interests include wireless networks, optical wavelength division multiplexed networks, network security and performance evaluation. His work has been supported by several sources including AFOSR, DST India, IBM, NSF, Cisco, Intel, Tata Power Company and Laboratory for Telecommunication Sciences. He holds three patents in wireless networks and has published several research articles including more than fifty journal publications. He has co-edited a book on Next Generation Internet Technologies in 2010; on Wireless Sensor Networks in 2004; on optical WDM networks in 2000 and 2004. He is co-recipient of the Best Paper

Award at the IEEE International Conference on Networks 2000 held in Singapore.

He is serving as the Editor-in-Chief of Springer Photonic Network Communications Journal and ICST Transactions on Ubiquitous Environments. He is serving or has served as a member of the Editorial Board for ACM Wireless Networks Journal, IEEE Transactions on Mobile Computing, Elsevier Optical Switching and Networking Journal, International Journal of Security and Networks, Ad Hoc and Sensor Wireless Networks Journal, International Journal of Vehicular Technology, and KICS Journal of Communications and Networks.

He serves on the Steering Committee of IEEE Advanced Networks and Telecommunications Symposium (ANTS) conference. He has served as Steering Committee Co-Chair of the International Conference on Broadband Networks (BroadNets); the International Conference on Security and Privacy for Communication Networks (Securecomm); and as member of the Standing Committee of IEEE Conference on Sensor, Ad Hoc and Mesh Communications and Networks (SECON) conference.

He has served as General Co-Chair for several IEEE Communications Society conferences including IEEE SECON and IEEE ANTS. He has also served as Technical Program Co-Chair for several conferences including IEEE INFOCOM, IEEE SECON and IEEE ANTS.

He is an IEEE Fellow and an ACM Distinguished Scientist.