POLITECNICO DI TORINO

PHOTONEXT

Seminars on Photonics organized by the PhotoNext Interdepartmental Center

www.photonext.polito.it

Telecom

Sensors

Components

Self-coherent optical transceivers, and ultra-wideband long-haul transmission systems

Prof. Robert Killey – University College London

Friday, March 22nd 2019, 13:30

Politecnico di Torino, C.so Montevecchio 71

Dipartimento di Elettronica e Telecomunicazioni - Sala Shannon

This talk will cover a number of topics currently being investigated by the Optical Networks Group at UCL. Firstly, recent developments in low-complexity self-coherent transceivers for short links (for metro, access and data-centre applications) will be described. Following this, the results of recent simulations and experimental studies on ultra-wideband long-haul transmission will be presented, including the recent record 74 Tb/s transmission over 6300 km of single mode fibre, using C+L band Raman-EDFA hybrid amplification (carried out in collaboration with Xtera), and the development of nonlinear transmission models including the effect of stimulated Raman scattering

Robert Killey received the D.Phil. degree from the University of Oxford. He is currently an Associate Professor in optical communications with the Optical Networks Group at UCL. His research interests include nonlinear fiber effects in WDM transmission, advanced modulation formats, and digital signal processing for optical communications. He has participated in many European projects and national projects. He is currently a Principal Investigator in the EPSRC funded TRANSNET programme. He has served on the technical program committees of many international conferences including ECOC and OFC, and is currently an Associate Editor of the Journal of Lightwave Technology and the IEEE Photonics Journal. He received the 2015 Royal Academy of Engineering Colin Campbell Mitchell Award.

Contacts:

- Prof. Roberto Gaudino – roberto.gaudino@polito.it
- Prof.ssa Gabriella Bosco – gabriella..bosco@polito.it

In collaboration with:

LINKS LEADING INNOVATION & KNOWLEDGE FOR SOCIETY

OSA Torino Student Chapter

POLITECNICO DI TORINO

PHOTONEXT

Seminars on Photonics organized by the PhotoNext Interdepartmental Center

www.photonext.polito.it

Telecom

Sensors

Components

Optical and Electrical Mitigation of Nonlinearities

Prof. Magnus Karlsson – Chalmers University of Technology (Sweden)

Friday, March 22nd 2019, 13:30

Politecnico di Torino, C.so Montevecchio 71

Dipartimento di Elettronica e Telecomunicazioni - Sala Shannon

The presentation will describe three recent works on mitigation of nonlinear distortions in fiber transmission. The first is based on phase sensitive amplifiers, the second is based on joint detection of frequency-comb-based channels. The third paper describes a DSP-friendly implementation of digital back-propagation, and comprise estimates of power consumption and chip area requirements for an ASIC-design.

Magnus Karlsson is since 2003 as Professor in photonics at Chalmers University of Technology, Sweden. He has authored or co-authored around 300 scientific journal and conference contributions, in the area of photonics and fiber optics. He is deputy editor of Optics Express. He has served in the technical program committees for OFC, ECOC, ICC and Globecom. He is a Fellow of the Optical Society of America and senior member of IEEE. His current research is focused around linear and nonlinear fiber transmission effects, as well as multidimensional modulation and detection in optical communication systems.

Contacts:

- Prof. Roberto Gaudino – roberto.gaudino@polito.it
- Prof.ssa Gabriella Bosco – gabriella..bosco@polito.it

In collaboration with:

LINKS LEADING INNOVATION & KNOWLEDGE FOR SOCIETY

OSA Torino Student Chapter