Workshop Speaker	
Full Name	Xiaodan Pang
Affiliation	Infinera
Presentation Title	Technological considerations in deploying coherent detection systems for future the Metro and Access applications

Biography

Dr. Xiaodan Pang is currently working as a Staff Optical Engineer with Infinera Metro Business Group, Stockholm Sweden, leading the EU Marie Curie Individual Fellowship "NEWMAN" Project. He was a researcher at COS Optical Networks Laboratory (ONLAB) KTH Royal Institute of Technology, from April 2017 to February 2018. He has also been a group member of the KTH/Acreo Kista High Speed Transmission Lab and a guest researcher at RISE Acreo.

After obtaining his PhD degree in 2013 from Technical University of Denmark, Kgs. Lyng by, Denmark, Dr. Xiaodan Pang has worked as a postdoctoral researcher at RISE Acreo Networking and Transmission Laboratory (NETLAB) in Kista between 2013 and 2017. He worked for two years as an experienced researcher (ER) within EU Marie-Curie IAPP Project GRIFFON from 2013 to 2015. Then he has led a Swedish ICT-TNG Post Doc Project on Nonlinear Fourier Transform-based fiber-optic transmission in 2016. He has also participated in the EIT Digital Royal Garden Project during 2016 and 2017.His work covers high speed fiber-optic transmissions for short/long range systems. He has extensive experience in digital signal processing for coherent and IMDD transmission systems, advanced modulation formats, radio-over-fiber, millimeter-wave and THz transmissions, Raman amplifications, system simulation and laboratory instrumentation.

To date, Dr. Xiaodan Pang has authored and co-authored over 100 publications in scientific journals and international conference proceedings. He serves as regular reviewer for Optics Express, Optics Letters, Journal of Light wave Technology, IEEE Photonics Technology Letters, IEEE Photonics Journals, among others.

200 words abstract

Technology roadmap reveals the trend for coherent communication systems that support high data rate and advanced modulation formats to shift from long-haul towards metro networks, where the traffic loads require the number of transceivers in a much larger scale. The targeting application scenarios consist but not limited to metro-core, metro-regional, access, and data center interconnects. The driven force behind this transition includes the increasing demand for higher data rate and distance product, the flexibility in supporting heterogeneous networking scenarios, and the gradually lowered cost, power consumption and form factors of coherent transceivers, etc. There are both technological and non-technological factors to consider for such a transition.

This talk will focus on the technological considerations of adopting coherent detection for intermediate and short reach transmissions. The maturity level of coherent transceiver technologies is getting gradually higher, enabled by photonic integrated circuits (PICs), advances in digital to analog converter (DAC) and analog to digital converter (ADC) technologies, flexible digital signal processing (DSP) functionalities and forward error correction (FEC) coding with potentially lowered complexity. It may soon balance out the stringent requirements for optoelectronic components and the added complexity of using DSP for direct-detection transceivers to support high-speed intermediate and short reach applications.