

Workshop Speaker

Full Name	Long Chen
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Presentation Title	Coherent for intermediate reach links

Biography

Long Chen received his B.E. degree in optical engineering from Zhejiang University, China in 2003, and Ph.D. degree in electrical engineering from Cornell University in 2009. He is currently the Engineering Manager for Integrated Photonics in Acacia Communications, responsible for design and testing of photonic integrated circuits. Prior to that he worked in Alcatel-Lucent Bell Laboratories as a Member of Technical Staff for three years. His primary focus has been on integrated optoelectronics for interconnects and telecommunications. He has published more than 50 papers, has over 25 granted patents, and served as invited speaker and committee member for various technical conferences.

200 words abstract

Optical coherent systems were perceived as power hungry, expensive, and complex that are only suitable for long-haul links. However, as the data rate demand continues to climb, we are seeing continued penetration of coherent technology into shorter and shorter link. The power of digital signal processing (DSP) is dropping significantly thanks to CMOS node scaling. The optics is getting smaller and cheaper thanks to photonic integration and advanced packaging solutions. The prospect of copackaging the DSP and the optics will further drive down the power, size and cost. Today a single coherent channel can support 400 to 600 Gbps, with 1 Tbps possible in the near future. Such single-channel solution is becoming economically favorable compared with direct detection systems relying on multiple parallel channels even for short-reach applications.