Tu3C-1 **13:15-13:30**

350 Gb/s Hybrid TDM/TFDM Coherent Access Supporting Concurrent PON and Fiber/FSO Links

Haipeng Zhang, Zhensheng Jia
Cable Television Laboratories Inc.

We demonstrate a TDM/TFDM hybrid coherent access network concentrating DSC processing at the OLT while using simple SC ONUs/endpoints. Three adaptable DSCs deliver 350 Gb/s bidirectional capacity, supporting P2MP PON and dedicated fiber/FSO P2P links.

Tu3C-2 **13:30-13:45**

Demonstration of 480-Gb/s 32-QAM PTBC Signal Transmission for Next-Generation Optical Access Networks

Jongwan Kim, Sang-Rok Moon, Sun Hyok Chang, Hun-Sik Kang, Joon Ki Lee
Electronics and Telecommunications Research Institute

We demonstrate the first 480-Gb/s 32-QAM PTBC transmission using a single-polarization coherent receiver for next-generation optical access networks. After 20-km fiber transmission, a 23-dB power budget is achieved, confirming PTBC feasibility, scalability, and compact operation.

Tu3C-3 **Invited** **13:45-14:15**

FTTR+X: Integrated Intelligence and Sensing

Gangxiang Shen[1], Jinhan Cai[1], Xiang Wang[2], Tianhai Chang[2]
[1]Soochow University, [2]Huawei Technologies Co., Ltd.

This invited talk discusses key enabling technologies of FTTR to fully unlock its potential for high-quality future access services, focusing on AI-driven deployment and optimization as well as integrated sensing capabilities for intelligent, adaptive, and service-aware indoor networks.

Tu3C-4 **14:15-14:30**

Upstream NOMA-DSCM for Coherent PONs via All-Optical Channel Aggregation

Chen Ding[1], Zijian Li[1], Qiarong Xiao[1], Yutian Liu[1], Zixian Wei[2], Ka Suen Lee[1], Chaoran Huang[1], Changyuan Yu[2], Chester Shu[1]
[1]The Chinese University of Hong Kong, [2]The Hong Kong Polytechnic University

We demonstrate joint NOMA-DSCM transmission for upstream coherent PONs using photonics-assisted spectral aggregation and subcarrier-pair Alamouti coding. Our results show reduced spectral occupancy and improved edgesubcarrier performance, validating practical capacity scaling.

Tu3C-5 **14:30-14:45**

On the Performance of Joint Optical- Electrical Polarization Tracking for PM-IM/DD Systems

Juntao Cao[1], Chen Cheng[1,2], Haiqiang Wei[1], Qi Wu[1], Xingyu Zhu[1], Wenyu Wang[1], Ming Tang[2], Chao Lu[1], Alan Pak Tao Lau[1], Kangping Zhong[1]
[1]The Hong Kong Polytechnic University, [2]Huazhong University of Science and Technology

We experimentally study the performance of joint optical and electrical polarization tracking in a 224- Gbit/s PM-IM/DD transmission system with SiP polarization controller. The tracking speed was doubled compared to optical polarization tracking scheme.