

Room D (Capri), 2F

Chair: Tong Ye (Fujitsu)

**We1D**

July 1 (Wed), 2026

Technologies for Coherent Short-Reach Transmission

08:30-10:00

**We1D-1**

**08:30-08:45**

**A Bias-Modulated Multi-Residual-Carrier Scheme for Robust Phase Recovery under Bias Drift and DC Blocking**

Tianhong Zhang<sup>1</sup>, Yutong Pan<sup>1</sup>, Xiansong Fang<sup>1</sup>, Yixiao Zhu<sup>2</sup>, Fan Zhang<sup>1,3</sup>

<sup>1</sup>Peking University, <sup>2</sup>Shanghai Jiao Tong University, <sup>3</sup>Peng Cheng Laboratory

We propose a bias-modulated multi-residual-carrier scheme for robust phase recovery under bias variations and receiver DC blocking. Experiments using 100-kHz ECL and 1-MHz DFB lasers show consistent phase tracking and performance comparable to single-residual-carrier recovery.

**We1D-2**

**08:45-09:00**

**All-Digital Baud-Rate Timing Recovery for Short-Reach Coherent Optical Transmission**

Menghong Xu<sup>1</sup>, Sheng Cui<sup>1</sup>, Jingpeng Liu<sup>1</sup>, Jianfeng Han<sup>1</sup>, Jing Dai<sup>2</sup>, Ming Tang<sup>1</sup>

<sup>1</sup>Huazhong University of Science and Technology, <sup>2</sup>FiberHome Telecommunication Technologies Co., Ltd.

We propose an all-digital baud-rate timing recovery (TR) scheme featuring a low timing jitter timing phase error detector (TPED) and sinc-function resampling.

**We1D-3**

**Invited**

**09:00-09:30**

**Monolithically Integrated SiP Self-Coherent Detection Receivers for Optical Interconnects**

Jingchi Li, Yikai Su

Shanghai Jiao Tong University

The proliferation of large-scale AI models has created an urgent demand for high-capacity and low-cost integrated photonic interconnects. Here we demonstrate several monolithically integrated SiP self-coherent receivers which support up to single-polarization 600 Gb/s transmission.

**We1D-4**

**09:30-09:45**

**Mitigation of Phase-to-Amplitude Noise in Optical SSB System via Phase Locking**

Songyan Liu, Tianwai Bo, Shuhua Zhao, Yihao Zhou, Jun Dong, Zhongwei Tan, Yi Dong

Beijing Institute of Technology

We developed a self-heterodyne based optical phaselocked-loop to mitigate laser phase noise and achieved a 0.5– 1.1 dB improvement in receiver sensitivity by applying it to optical single-sideband systems over a 300-km transmission link.

**We1D-5**

**09:45-10:00**

**In-Service Transmitter Full-Field Frequency Response Monitoring Utilizing the Embedded Photodetector**

Jie Xu, Meng Xiang, Junjiang Xiang, Gai Zhou, Songnian Fu, Yuwen Qin

Guangdong University of Technology

We report a training-symbol enabled in-service full-field frequency-response monitoring for digital- subcarrier-multiplexing (DSM) transceiver. Utilizing an embedded photodetector with 55-GHz bandwidth for 96- GBaud DSM signals achieves both 0.32-dB amplitude and 0.05-rad phase estimation errors .