Post-deadline Paper Session

Conference Room 102B, 1F

13:30-15:30 · November 4, 2026 · Wednesday
Presiders: Liu Liu, Zhejiang University, China & Lan Li, Westlake University, China

13:30-13:45 · ACP2026-1012-2

Single-Lane 200-GBaud (400-Gb/s) PAM-4 Transmitter Using 28-nm CMOS and Pure Silicon MZM with Bias-Tuned Bandwidth Matching and Swing-Compensated Linearity

Ke Li[1*], **Junbo Zhu**[1], Bowen Zhang[1], Mengqi Wu[1], Chen Zhen[1], Zhang Chen[1], Peng Li[1], Daoqun Liu[1], Xu Zhang[1], Qibing Wang[1], Yu Zheng[1], Xiaoqi Peng[1], Jiayao Li[1], Shenghao Liu[2], Wei Cao[2], Weiwei Zhang[3], Chao Li[1], Lei Wang[1], Zhixue He[1], Shaohua Yu[1], Graham Reed[3]

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Reducing DSP overhead with physical-domain electro-optic dynamics, we reconfigure segmented silicon modulators into voltage-tunable analog networks. Driven by 28-nm CMOS, the transmitter demonstrates bias-matched, swing-compensated 200-GBaud (400-Gb/s) PAM-4 with 1.30-pJ/bit efficiency, 8e-4 B2B BER, and sub-FEC 1-km transmission

13:45-14:00 · ACP2026-1015-22

Signal Denoising via Talbot-Based Coherent Optical Sampling Using a Monolithically Integrated Thin-Film Lithium Niobate Photonic Circuit

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We demonstrate a monolithically integrated thin-film lithium niobate circuit combining phase modulation and four delay lines for 10 GHz Talbot coherent sampling, reducing 2.5 GBaud PAM2 bit error rates by over three orders of magnitude.

14:00-14:15 · ACP2026-1015-5

77.6-Tb/s Unrepeatered Field Transmission over Gas-Purged HCF: 142-km Bidirectional and 249-km Unidirectional Operation using Commercial C+L-Band Transponders

Sai Chen[1], Yan He[1,2], Hu Lingling[3], Li Xiao[4], Dechao Zhang[3], Jiekui Yu[4], Dong Yang[1], Alan Pak Tao Lau[2], Liang Dou[5], Yuanchao Su[1]

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We report the first fully loaded 77.6-Tb/s C+L-band unrepeatered transmissions at a net 8 bit/s/Hz using commercial equipment over gas-purged hollow-core fibre deployed in aerial, buried, and ducted sections: 142-km same-wavelength bidirec- tional and 249-km unidirectional paths. Distributed temperature sensing supports 48-hr assessment of transmission stability.

14:15-14:30 · ACP2026-1015-23

A Weakly Coupled 4-Core Fiber Transmission over 13,696 km with Integrated Amplification for a 701-Pb/s·km Capacity-Distance Product

Yu Wang[1], Yanze Wang[1], Bowen Zhang[1], Shurong Zhai[1], Shigui Zhang[2], Liping Ma[2], Yanpu Wang[2], Yan Wang[2], Jianping Li[2], Jiang Lin[2], Nan Sun[3], Jinhao Liu[3], Min Yan[3], Guohua Zhai[3], Chenhuan Hua[3], Gan Luo[3], Zhihui Dong[3], Zhiqun Yang[1], Yaping Liu[1*], Zhanhua Huang[1], Lin Zhang[1*]

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Weakly coupled multi-core fibers (WC-MCFs), together with integrated multi-core amplifiers, provide a promising solution for increasing the capacity of long-haul submarine cable systems. Using a newly developed low-loss WC-4CF and high-performance integrated 4-core erbium-doped fiber amplifiers (4C-EDFAs), we experimentally demonstrate a 51.2-Tb/s transmission over 13,696 km, associated with a generalized mutual information (GMI) related capacity of 62.24 Tb/s. The world-record capacity-distance product of 701.24 Pb/s·km （corresponding to a GMI-related capacity-distance product of 852.44 Pb/s·km) is achieved for C-band submarine transmission over WC-MCFs. This result is enabled by a WC-4CF exhibiting a low loss of 0.153 dB/km, a large effective mode area of 115 μm², and a low inter-core crosstalk of −54.6 dB/100km, as well as a highly integrated 4C-EDFA with a low noise figure of 4.40 dB. This work presents a realistic solution ready for real-time submarine transmission in the future.

14:30-14:45 · ACP2026-1015-2

Low-Complexity 4 × 4 MIMO Equalization for GMI-Estimated 51.68 Pb/s Capacity in a 10-km 38-Core Ring-Core Fiber

Suqing Li[1], Jie Liu[1*], Junyi Liu[1], Hualin Li[1], Haolin Zhou[1], Lei Shen[2], Shuo Xu[2], Jie Luo[2], Shuqi Mo[1], Yuming Huang[1], Yining Huang[1], Siyuan Yu[1*], Zhaohui Li[1*], Lei Zhang[2]

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We demonstrate a record bidirectional GMI-estimated capacity of 51.68 Pb/s (25.84 Pb/s × 2) over a 10-km 38-core ring-core fiber using SDM-WDM transmission with low-complexity 4 × 4 MIMO equalization.

14:45-15:00 · ACP2026-1015-29

22.95-Tb/s RGB-Equivalent Multi-Task Semantic Communication over a 342.8-km Unrepeatered HCF-SSMF Link Using Continuous JSCC

Xiang Cai[1], Zhiming Sun[1], Shuailuo Huang[2], Yixiao Zhu[3*], Chenbo Zhang[1], Yu Qin[4,5], Zaifan Wu[1], Wenhao Wang[6], Zelin Wang[2], Ning Zhang[6], Limin Xiao[4], Xian Zhou[7], Shikui Shen[2*], Fan Zhang[1*]

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We experimentally demonstrate distortion-tolerant continuous JSCC semantic communication over 342.8-km unrepeatered HCF-SSMF link with EDFA-only amplification, achieving 23.22-dB mean PSNR and 22.95-Tb/s quality-qualified RGB-equivalent throughput while supporting segmentation, depth estimation and detection from shared reconstructions.

15:00-15:15 · ACP2026-1015-20

Single-PD SSB Direct Detection PON Enabling 365 Gb/s over 1020-ps/nm SSMF and 435 Gb/s over HCF

Yixiao Zhu[1*], Yu Qin[2,3], Xiang Cai[4], Yutong Pan[4], Tianhong Zhang[4], Lingjun Zhou[1], Luyao Huang[5], Shuailuo Huang[6], Shikui Shen[6*], Yichun Shen[3], Zelin Wang[6], Limin Xiao[2], Dezhi Zhang[5], Ming Jiang[5], Weisheng Hu[1], Fan Zhang[4*]

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We demonstrate single-sideband direct-detection PON using single photodiode, exhibiting 1000-ps/nm dispersion tolerance with simplified ONUs. We achieve 365-Gb/s peak rate with 29-dB budget over 60-km SSMF, and 435/225-Gb/s rate with 32/47-dB budget over 25-km AR-HCF.

15:15-15:30 · ACP2026-1015-9

Quantum Teleportation over Hollow-Core Fiber in Field

Riyao Song[1], Yazhou Zhao[1], Yunru Fan[1], Yangbin Ma[1], Sishen[2], Haizhi Song[2], Hao Li[3], Lixing You[3], Shirong Bu[1], Liang Zhai[1], Guangcan Guo[1], Qiang Zhou[1*]

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We report the first field-deployed implementation of quantum teleportation over hollow-core fiber (HCF), demonstrated on the China Telecom testbed at Xinglong Lake. Rack-mounted quantum nodes built from telecom-compatible components enable high-fidelity teleportation of time-bin qubits over HCF links without active link stabilization. These results demonstrate the feasibility of deploying HCF-based quantum networks in real-world operational environments.