

Room A (Grand Ballroom 1), 2F

Chair: Sunghyun Bae (Sejong University)

Th1A

July 2 (Thu), 2026

Multiplexing: Space, Wavelength, and Subcarrier

08:30-10:00

Th1A-1 Invited 08:30-09:00

Reducing Energy Consumption of Amplified Links through Space-Division Multiplexing

Leif Katsuo Oxenløwe
Technical University of Denmark

Optical fiber systems may save on resources and energy consumption by transmitting data slightly differently, using more spatial channels, and technologies such as optical frequency combs can support this change.

Th1A-2 09:00-09:15

Real-Time 200km Repeater Length 800ZR+DWDM Transmission for AI-Driven DCI

B. Zhu¹, T. Geisler¹, P. I. Borel¹, M. Stegmaier¹, B. Palsdottir¹, P. Jenneve², H. Zhang²
¹Lightera Japan Co., Ltd, ²Cisco Systems

We report record-setting real-time 26.4-Tb/s (33×800Gb/s) 800ZR+ DWDM transmission over 1003 km of SCUBA125 fiber with 200.5-km amplifier spans, demonstrating scalable, cost-effective, high-capacity connectivity for AI-driven metro-regional data-center interconnect (DCI) applications.

Th1A-3 09:15-09:30

Experimental OFDM Transmission Over MMF Under Launch-Offset-Dependent Modal Dispersion With Real-Time Equalization

Kanna Onda, Kazuhiko Tamesue, Nao Komatsu, Tetsuya Kawanishi
Waseda University

We demonstrated OFDM signal transmission over multimode fiber in the presence of modal dispersion due to launch offset, achieving stable 64-QAM transmission at 16 GHz over 1 km with a baseband transceiver featuring realtime equalization.

Th1A-4 09:30-09:45

Frequency-Domain Filtering with Fractional Oversampling and Integrated Sampling-Rate Conversion for MIMO Equalization in Coupled Multi-Core Fiber Transmission

Takahiro Odagawa, Manabu Arikawa, Kohei Hosokawa
NEC Corporation

We propose non-integer sampling-rate conversion integrated with frequency-domain pre-processing filter for MIMO equalization in long-haul coupled multi-core fiber transmission. Reduction of the computation complexity by 13% with similar performance to conventional DSP is experimentally demonstrated.

Th1A-5 09:45-10:00

Pulse-Shape Design for Digital Subcarrier Systems in the Presence of Finite-Length Tx/Rx Filters, Quantization and Clipping Noise

Roya Gholamipourfard Amirhossein Ghazisaeidi
Nokia Bell Labs

We propose an analytical framework that enables system parameter optimization and performance evaluation for digital subcarrier multiplexing and single-carrier transmission, accounting for quantization noise and finite impulse response filter lengths at both transmitter and receiver.