Th1C-1 **08:30-08:45**

Real-time and Wide Field-of-View (FOV) Dual-Feedback Optical Tracking and Alignment System for Free-Space Optical Communications

Guo-Liang Shih[1], Chia-Yu Lee[1], Yuan-Zeng Lin[1], Yu-Han Lin[1], Yu-Heng Hong[2], Hao-Chung Kuo[1,2], Huang-Ming Chen[1], Chi-Wai Chow[1]
[1]National Yang Ming Chiao Tung University, [2]Hon Hai Research Institute

We demonstrate a real-time wide field-of-view (FOV) dual-feedback optical tracking and alignment system integrating both coarse and fine alignments. The process is completed within seconds over a 60°-FOV, enabling stable free-space-optical-communication (FSOC) at 73.6-Gbit/s/λ.

Th1C-2 **08:45-09:00**

Aerial Mirror Relay for Low-Loss Underwater–Airborne Optical Communication

K. Kuwahara[1], H. Miyamoto[1], K. Ichinose[1], D. Kuzuhara[1], K. Maekawa[1], K. Tanaka[2], S. Hayashida[2], T. Kodama[1]
[1]Kagawa University, [2]Sangikyo Corporation

We demonstrate a low-loss underwater–airborne optical link using an aerial mirror relay that minimizes underwater attenuation. Adaptive OFDM enables stable bidirectional transmission and real-time 4K-UHD streaming under class1 eye-safe 850-nm illumination in turbid seawater.

Th1C-3 **09:00-09:15**

End-to-End Demonstration of Congestion-Free Real-Time Remote Control System with Traffic-Type-Aware Prediction

Yuka Okamoto, Naotaka Shibata, Kenji Miyamoto, Tomoya Hatano, Tatsuya Shimada
NTT, inc.

We performed end-to-end demonstrations of real-time drone control system with wireless and optical links, and achieved

Th1C-4 **09:15-09:30**

Beamforming for Arrayed Waveguide Grating Router-Based Optical Wireless Communication

Yin-He Jian[1], Guo-Liang Shih[1], Chi-Wai Chow[1], Eduward Tangdiongga[2]
[1]National Yang Ming Chiao Tung University, [2]Eindhoven University of Technology

A high reconfiguration-rate beamforming-technique using wavelength-fixed laser and phase modulator is proposed for arrayed-waveguide-grating-router-based setup. Data-rate of 36.6-Gbps and sum-rate of > 30-Gbps are realized in single-user and two-user scenarios. Extendibility is confirmed by simulation.

Th1C-5 **Invited** **09:30-10:00**

Photonic Integrated Transceivers for Broadband Optical Wireless Communication

Eduward Tangdiongga
Eindhoven University of Technology

Optical wireless communication uses narrow, steerable beams as secure high-capacity links. Photonic integrated circuits enable compact, low-power beam steering and wideaperture receivers. This talk presents PIC-based designs enabling scalable, broadband, high-density indoor OWC networks.