

Room B (Grand Ballroom 2), 2F

Chair: Sanghoon Chin (CSEM)

**Tu3B**

June 30 (Tue), 2026

Emerging Fiber-Optic Techniques

13:15-14:45

**Tu3B-1 Invited 13:15-13:45**

**AI-enhanced Data Analytics for Distributed Acoustic Sensing: Methods and Real-world Case Studies**

Huioon Kim, Hyoyoung Jung, Donjung Lee, Young Ho Kim, Myoung Jin Kim  
Korea Photonics Technology Institute

This paper reviews AI-enhanced data analytics for distributed acoustic sensing (DAS), covering signal denoising, event classification, and anomaly detection. KOPTI's case studies demonstrate real-world applications in perimeter security, industrial monitoring, and spatiotemporal anomaly detection.

**Tu3B-2 13:45-14:00**

**Integrated Vibration Sensing and Communication over Anti-Resonant Hollow-Core Fiber**

Siyuan Liu<sup>1,2</sup>, Jiarui Zhang<sup>1</sup>, Yucong Liu<sup>2</sup>, Mingqing Zuo<sup>2</sup>, Dawei Ge<sup>2</sup>, Peng Li<sup>3</sup>, Dong Wang<sup>2</sup>, Lei Zhang<sup>3</sup>,  
Dechao Zhang<sup>2</sup>, Jie Luo<sup>3</sup>, Zhangyuan Chen<sup>1</sup>  
<sup>1</sup>Peking University, <sup>2</sup>China Mobile Research Institute, <sup>3</sup>Yangtze Optical Fibre and Cable Joint Stock Limited Company

We experimentally demonstrate simultaneous 32-GBaud 16QAM bidirectional transmission and vibration sensing over a 142-km two-span anti-resonant hollow-core fiber. Vibration localization is achieved by extracting phase information from both co- and counter-propagating communication signals.

**Tu3B-3 14:00-14:15**

**Inter-Core Spontaneous Raman Scattering in Multi-Band Multi-Core Fiber Optical Systems**

Jun Sakaguchi, Hideaki Furukawa  
National Institute of Information and Communications Technology

We characterize the wavelength-dependent backward inter-core spontaneous Raman scattering caused by O, E, S, C, L-band lightwave in a 7-core fiber system. O-band shows potential advantage for use in classical-quantum coexisting multi-core fiber transmission systems.

**Tu3B-4 Invited 14:15-14:45**

**Multicore Fiber and System Solutions for High-Capacity Submarine Cables**

John D. Downie<sup>1</sup>, Lidia Galdino<sup>2</sup>, Pascal Pecci<sup>3</sup>, Jason Hurley<sup>1</sup>, Sijing Liang<sup>4</sup>, Periklis Petropoulos<sup>4</sup>,  
Yongmin Jung<sup>4</sup>  
<sup>1</sup>Corning Incorporated, <sup>2</sup>Corning Optical Communications, <sup>3</sup>Meta, <sup>4</sup>University of Southampton

We examine fiber and system options for future highcapacity submarine cables of 1 and 2 Pb/s. We focus on multicore fiber systems for the largest capacity cables and analyze fiber and amplifier options.