

Room B (Grand Ballroom 2), 2F

Chair: Huioon Kim (KOPTI)

Tu2B

June 30 (Tue), 2026

ROF & Signal Processing

10:15-11:45

Tu2B-1 Invited 10:15-10:45

Integrated Radio-over-Fiber for the Latest Applications Requests

Paolo Ghelfi¹, Filippo Scotti¹, Luca Rinaldi¹, Antonella Bogoni²
¹CNIT, ²Scuola Superiore Sant'Anna

Although Radio-over-Fiber is a simple and consolidated solution, the rapid advancements of integrated photonic technologies are enabling new nuances, meeting the increasingly pressing requests of the wireless communication systems.

Tu2B-2 Invited 10:45-11:15

Compact FPGAs Catalyzing Innovation in Optical Fiber Sensing and FMCW LiDAR

Sanghoon Chin, Séverine Denis, Jannis Holzer
Centre Suisse d'Electronique et Microtechnique SA (CSEM)

Compact FPGAs are accelerating innovation in optical fiber sensing and FMCW LiDAR by enabling fast, efficient signal processing and reduced system footprints. Their real-time adaptability supports scalable, energy-efficient architectures that advance next-generation photonic sensing applications.

Tu2B-3 11:15-11:30

20-GHz Bandwidth Optical STFT with 160-MHz Resolution Using Cascaded Combs

Xue Lan¹, Haoyan Xu¹, Shilong Chen¹, Kun Xu¹, Ming Li^{2,3}, Yitang Dai¹
¹Beijing University of Posts and Telecommunications, ²Chinese Academy of Sciences, ³University of Chinese Academy of Sciences

This work demonstrates a Short-Time Fourier Transform (STFT) architecture with 125 resolvable frequency components using cascaded optical frequency combs. The proposed architecture utilizes only 1/2500 of the dispersion required by conventional schemes.

Tu2B-4 11:30-11:45

Hilbert Transform, a Mathematical Tool for Multi-Parametric Interferometric Signal Demodulation

J. Esquivel-Hernandez¹, María de los Ángeles Martínez-Guerrero¹, R. Martínez-Manuel¹, L. Valentín-Coronado^{1,2}, D. Maldonado-Hurtado³, D. Barrera³, S. Sales³
¹Centro de Investigaciones en Optica, ²Tecnología e Innovación, ³Universitat Politècnica de València

A robust method for multi-parameter monitoring in interferometric-fiber-based sensing applications using the Hilbert Transform (HT) is presented. Experimental results demonstrating the HT's application in simultaneous monitoring of two physical parameters are presented.