WEDNESDAY 08:30 – 12:30

Recent Progress in Compact, Ultra-Low Phase Noise Microwave-Photonic Frequency Synthesis

WW04
EuMC

Chair: J. Christoph Scheytt [1]
Co-Chair: Franz-Xaver Kärtner [2]
[1]Paderborn University , [2]DESY / Hamburg University

Room: Juliana 4

This workshop will introduce participants to microwave photonic frequency synthesis, with a focus on achieving ultra-low phase noise through the use of mode-locked lasers and/or optical frequency division. As the demand for higher precision and frequency stability in microwave systems increases, particularly in areas such as telecommunications, radar and time-frequency metrology, the ability to generate low phase noise microwave signals becomes increasingly critical. Optical techniques have emerged as powerful tools for frequency synthesis due to the exceptional frequency stability, wide frequency range from microwave to THz, and low noise of optical oscillators. Besides ultra-low phase noise frequency synthesis, another aspect of the workshop will be compact realizations from current benchtop devices to future chip-scale microwave-photonic frequency synthesizers

PROGRAMME

Integrated photonic low-noise microwave and mm-wave synthesis

Scott Diddams [1]
[1]NIST, University of Colorado, CO, US

The Power of Free-Running: Generating Microwaves Without Servo Bumps

Thomas Schibli [1]
[1]University of Colorado, CO, US

Low phase noise microwave frequency synthesis using OEPLL and OPLL

Meysam Bahmanian[1]
[1]Paderborn University, Germany

Compact frequency comb systems for timing transfer and low-noise microwave generation

Jungwon Kim [1]
[1]KAIST, South-Korea

Chip-based low noise photonic microwave oscillators via integrated optical frequency division

Jiang Li [1]
[1]HQ Photonics, Pasadena, CA, US