

Industrial Workshop

Organiser: Sara Parrella; Eva Ribes-Vilanova

Company/Organisation: Keysight

First 45 mins

Title: New Sub-THz & Test Techniques for 6G Research

Abstract: Sub-terahertz (sub-THz) frequencies offer wide contiguous bandwidths for wireless communications and are an active research area for 6G.

While 6G deployment in sub-THz may be a few years away, researchers are already beginning to build out the components necessary to enable the sub-THz ecosystem.

In this presentation, we'll show how testing components under realistic modulated signals is critical to predict system-level performance. And to enable 6G research in ultra-wide bandwidth signals, learn how a flexible testbed can be used.

Speaker: Sara Parrella, Solutions Engineer, Keysight

Second 45 mins

Title: Applying AI/ML to 6G PHY Research

Abstract: EDA (Electronic Design Automation) software is used extensively in developing 6G technology. It enables researchers to design and simulate complex integrated circuits with high accuracy and efficiency. Through EDA software, researchers can model the behavior of various components and systems, analyze performance metrics, and optimize designs for better functionality and cost-effectiveness. Key machine learning techniques are being used in 6G air interface research. They include:

- Reinforcement of learning for optimizing network resources
- Deep learning for channel estimation and prediction
- Generative adversarial networks for synthesizing realistic wireless channel data

This workshop will introduce how EDA software is being employed to study 6G technologies in the physical layer perspective (PHY).

Speaker: Eva Ribes Vilanova is a Product Marketing Manager at Keysight Technologies.

A 25+ year professional, passionate about solving challenges with a focus on RF & μ Wave designs and systems. She holds a telecommunications engineering degree. She also authors papers for international conferences in the field of electronic design for wireless communications and model-based system engineering.