

COST IC1004 Training School

Propagation Measurement, Modelling, and OTA-Emulation

Venue:

Ilmenau University of Technology
Feynmanbau (ZMN)
Gustav-Kirchhoff-Straße 7
98693 Ilmenau, Germany

Dates: 12 November 2012 9.00 – 14 November 2012 16.30

Registration: <https://conferences.tu-ilmenau.de/frontend/?sub=118>

Inquiries : COST-TS@tu-ilmenau.de

Local organiser: Wim Kotterman, Tel. +49 3677 693722

Keynote speakers:

Werner Schroeder (RheinMain University, Germany)
Milan Narandžić (University of Novi Sad, Serbia)

Speakers:

Alexis Paolo Garcia Ariza (MEDAV, Germany)
Martin Käske (TU Ilmenau, Germany)
Wim Kotterman (TU Ilmenau, Germany)
Markus Landmann (Fraunhofer IIS, Germany)
Christian Schneider (TU Ilmenau, Germany)
Gerd Sommerkorn (TU Ilmenau, Germany)
Reiner Thoma (TU Ilmenau, Germany)
Rudolf Zetik (TU Ilmenau, Germany)

General Outline:

Multidimensional channel sounding
Performance Evaluation based on measured data
High resolution parameter estimation
Processing of measured data
State-of-the-Art channel modelling
Real-time UWB MIMO channel sounding and applications
60 GHz channel sounding and applications
Polarimetric MIMO radar and MIMO sensing at mm-waves
Practical aspects of OTA
Calibration of OTA installations
Wave Field Synthesis

Draft schedule

Monday 12 November 2012

1. Opening
2. Reiner Thomä: Wideband Real-time Channel Sounding - Pt. I: Systems and Applications
 - a. Introduction
 - b. Multidimensional Sounder Systems
 - c. Application of Sounding Data
3. Martin Käske: Wideband Real-time Channel Sounding - Pt. II: High Resolution Parameter Estimation
 - a. Multidimensional data model
 - b. Iterative ML parameter estimation
 - c. Antenna data model
4. Gerd Sommerkorn: Automated statistical processing of measured data for WINNER
 - a. Measurement campaign – preparation and data structuring
 - b. Post-processing issues
5. Milan Narandžić: State-of-the-Art channel modelling
 - a. Different modelling philosophies
 - b. Comparison of COST and WINNER Generic Geometry-based Stochastic Channel Models
6. Christian Schneider: Measurement-based system evaluation
 - a. Application of Channel Sounding Data
 - b. Pre-processing for Simulation

Tuesday 13 November 2012

1. Markus Landmann/Wim Kotterman: Why OTA and how
 - a. Interaction between antenna and EM environment
 - b. Interaction between antenna and appliance and user
 - c. Basic test setups
2. Werner Schroeder: Practical aspects of MIMO OTA testing
 - a. Which physical properties of terminals to test?
 - b. Designing end-to-end measurements based on specifics of communication standards
 - c. Characterization of antenna performance for diversity and spatial multiplexing by simple end-to-end measurements
3. Markus Landmann: Calibration of OTA installations
 - a. Need for calibration, consequences of inaccuracies

- b. Sources of error
 - c. Which remedies at which costs
4. Wim Kotterman: Wave Field Synthesis
- a. Types of synthesis depending on purpose
 - b. Synthesising time-variant mobile channels
5. Social event

Wednesday 14 November 2012

1. Rudolf Zetik: Real-time UWB MIMO channel sounding and applications
- a. Architecture and design
 - b. UWB sounder calibration
 - c. Applications
 - d. Practical exercise UWB localisation systems
2. Paolo Garcia: Real-time mm-wave sounding
- a. 60 GHz polarimetric MIMO sensing: architectures and technology
 - b. 60 GHz channel sounding and characterisation for A340 aircraft
 - c. Polarimetric MIMO radar at mm-waves
 - d. Practical exercise/demonstration: 60 GHz channel sounding
3. Closure