

MONDAY WORKSHOPS AND SHORT COURSES

13:20 – 17:40

Room 3

SCM1 (EUMC/EUMIC) RF Device Characterisation (TARGET)

Organisers

Gottfried Magerl, Markus Mayer
Vienna University of Technology, Austria

Abstract

This workshop presents an overview of the most important measurement techniques for the accurate non-linear characterisation of active rf devices. After a brief introduction into rf semiconductor devices, recent advances of the following techniques will be presented:

- pulsed dc and S-parameter measurements
- equivalent-circuit element extraction techniques
- non-linear vector network analysis and calibration
- broadband source and load pulling techniques.

Programme

13:20 – 14:00 *Nonlinear Behaviour of RF Semiconductor Devices*

F. Schwierz, TU Ilmenau, Germany

14:00 – 14:40 *New Solutions for Nonlinear Pulsed Characterisation of Microwave Transistors*

J.-P. Teyssier, University of Limoges, France

14:40 – 15:20 *S-Parameter Based Equivalent-Circuit Element Extraction Techniques*

T. Martin-Guerrero, University of Malaga, Spain

15:20 – 15:40 *Coffee*

15:40 – 16:20 *Advances in Nonlinear Vector Network Analysis*

J. Verspecht, Jan Verspecht bvba, Belgium

16:20 – 17:00 *NVNA Calibration Issues*

Y. Rolain, Free University of Brussels, Belgium

17:00 – 17:40 *Broadband Source and Load Pulling Technique*

H. Arthaber, Vienna University of Technology, Austria

13:20 – 17:40

Room 22a

SCM2 (EUMC/EUMIC) Device Level Linearization Techniques (TARGET)

Organisers

Gottfried Magerl, Vienna University of Technology, Austria
José Carlos Pedro, University of Aveiro, Portugal

Abstract

Device-level linearization techniques have been standing as a promising area in the solution of the PA linearity versus efficiency trade-off thanks to recent advances on the understanding of the device's large-signal distortion behaviour.

This workshop addresses the main nonlinear characteristics responsible for the transistor's intermodulation distortion behaviour. These characteristics will be employed for optimizing the device operating conditions, namely bias voltages, fundamental frequency load termination, as well as envelope and harmonic impedance conditions. Finally, design strategies to achieve both high linearity and efficiency will be discussed.

Programme

13:20 – 14:00 *Advances in Nonlinear Device Modelling*

T. Brazil, National University of Ireland

14:00 – 14:40 *Quality Assessment of Nonlinear Device Models*

A. Mediavilla, University of Cantabria, Spain

14:40 – 15:20 *Large Signal IMD Behaviour: Load Line and Bias*

C. Fager, Chalmers University, Sweden

15:20 – 15:40 *Coffee*

15:40 – 16:20 *Optimization of Operating Conditions for Improved Linearity*

N. Borges Carvalho, University of Aveiro, Portugal

16:20 – 17:00 *Device-Based Linearization Techniques Applied to Active Antennas and Arrays*

J. A. García, University of Cantabria, Spain

17:00 – 17:40 *Design Strategies for Linearity AND Efficiency*

J. C. Pedro, University of Aveiro, Portugal