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Einladung zum Gastvortrag

Das Institut für Elektronik lädt herzlich zum Gastvortrag von Herrn Prof. Alexandre Boyer mit dem Titel:

Basis of modeling of electronic components for EMC simulation

Zeit: Mittwoch, 29.03.2023, 10:00 Uhr
Ort: Bibliothek HF01120, Inffeldgasse 12, 1.Stock

Abstract:
Guaranteeing electromagnetic compatibility (EMC), power or signal integrity are essential requirements to ensure the reliable and safe operation of electronic devices and systems. In order to meet these requirements and reduce redesign costs due to EMC non-compliance, electronic designers use simulation to predict EMC performances, optimize and validate design before fabrication. In spite of the recent development of electromagnetic simulators to model the complex behavior of printed circuit boards, connectors or cables, one serious limit of this simulation-based validation process remains the modeling of components. Component manufacturers do not deliver models necessarily and the validity ranges of the proposed models are not always well-defined. Accuracy-limited models may compromise the relevance of EMC prediction. In order to solve this issue, it is of major importance that EMC and electronic engineers know how to model the most familiar components mounted in electronic equipments from an EMC point of view. This is the purpose of this lecture, which addresses the basic methods to characterize and build equivalent models for EMC simulations, for components such as capacitors, inductors, ferrites, common-mode chokes, transient-voltage suppressors or integrated circuits.

Alexandre Boyer obtained a Masters degree in electrical engineering in 2004 and a PhD in Electronics from the Institut Nationale des Sciences Appliquées (INSA) in Toulouse, France, in 2007. He is currently an Associate Professor in the Department of Electrical and Computer Engineering at INSA, Toulouse. He is leading his research at the Laboratoire d'Analyse et d'Architecture des Systèmes (LAAS-CNRS), as part of the 'Energy and Embedded Systems' research group. His current research interests include EMC measurements, IC EMC and reliability modeling, and computer aided design (CAD) tool development for EMC (IC-EMC freeware).