

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Zhuoxiang Ren**

(*University Pierre and Marie Curie (University Paris 6),*

Institute of Microelectronics in Chinese Academy of Science)

报告题目:

**Computational Electromagnetics and
Its Application in IC design and
verification**

邀请人: 崔涛 博士

报告时间: **2011 年 12 月 29 日 (周四)**

上午 10: 00-11: 00

报告地点: 科技综合楼三层 **301**

计算数学所小报告厅

Abstract:

Electromagnetic field solvers becomes nowadays indispensable tools in sub-micro and nano scale ICs design and SoC/SiP integration. The presentation is divided in two parts. The first part will give a brief review of recent advances in computational electromagnetics, including the mathematical structure of electromagnetism in terms of differential forms, the complementarity of dual formulations and the geometry approach using dual grids. A comparative overview of most used EM solvers in IC design and verification will be then followed. The second part will be devoted to the application of EM solvers in IC area, especially the parasitic extraction. This includes parasitic extraction of IC interconnects, inductance extraction of RF/analog chips and packages, and extraction of macro-model or S-parameters for mixed signal noise analysis. One of the critical issues in nano scale chip design, i.e., handling the process variability, will also be addressed. The approaches such as the sensitivity analysis and statistical analyses will be discussed.

Biography:

Dr. Zhuoxiang Ren is a professor at the University Pierre and Marie Curie (University Paris 6) in France and a Professor at the Institute of Microelectronics in Chinese Academy of Science. He graduated from Huazhong University of Science and Technology in 1982 and received his PhD from the Insitutit Polytechnique de Toulouse in France in 1986. After his PhD, he was, respectively, an assistant professor at the Ecole Normale Superieure de Cahcan and a senior researcher at the Centre Nationale de Recherche Scientifique in France. In 1998, he was a visiting professor at the University of Akron in USA. After then, he worked at various EDA companies, including Ansoft Corporation, Cadence Design Systems Inc., Mentor Graphics Corporation, and served as a staff engineer, a principal engineer, respectively, until 2010.

Prof. Ren has more than 25 years of research experiences on numerical modeling of electromagnetic systems and EDA software development. He has published over 130 journal and refereed international conference papers, is a co-author of two book chapters, and holds two patents. He has been awarded a Bronze Medal of CNRS in France in 1996. His research interests include numerical methods for the computation of electromagnetic fields, modeling and simulation of multi-scale and multi-physical problems of micro and nano electronic and electromechanical devices and systems.

欢迎大家参加!