

Syracuse University

**EECS/CASE Colloquium  
IEEE AP/MTT/EMC Society**

**Prof. Jin-Fa Lee**  
ElectroScience Laboratory  
Department of ECE  
The Ohio State University

**Wednesday, November 13, 2013  
4-201 Center for Science and Technology – 1:00 PM**

**CEM Algorithms for EMC/EMI Modeling: Electrically Large (Antenna Placements on Platforms) and Small (SI in ICs and Packaging) Problems**

**Abstract:** This lecture will present on-going efforts in combating the multi-scale electromagnetic problems, both electrically large (antenna placements on platforms) and electrically small but complex (SI in ICs) through the use of non-conventional PDE methods that are non-conformal. The non-conformal numerical methods relax the constraint of needing conformal meshes throughout the entire problem domain. Consequently, the entire system can be broken into many sub-problems, each has its own characteristics length and will be meshed independently from others. Particularly, our discussions will include the following topics: Integral Equation Domain Decomposition Method (IE-DDM), Non-Conformal DDM with Higher Order Transmission Conditions and Corner Edge Penalty, Multi-region/Multi-Solver DDM with Touching Regions, Discontinuous Galerkin Time Domain (DGTD) Method with Hierarchical MPI-CUDA GPU Implementation.

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**Bio:** Jin-Fa Lee received the B.S. degree from National Taiwan University, in 1982 and the M.S. and Ph.D. degrees from Carnegie-Mellon University in 1986 and 1989, respectively, all in electrical engineering. From 1988 to 1990, he was with ANSOFT (later acquired by ANSYS) Corp., where he developed several CAD/CAE finite element programs for modeling three-dimensional microwave and millimeter-wave circuits. From 1990 to 1991, he was a post-doctoral fellow at the University of Illinois at Urbana-Champaign. From 1991 to 2000, he was with Department of Electrical and Computer Engineering, Worcester Polytechnic Institute. He joined the Ohio State University at 2001 where he is currently a Professor in the Dept. of Electrical and Computer Engineering. Prof. Lee is an IEEE fellow and is currently serving as an associate editor for IEEE Trans. Antenna Propagation. Also, he is a member of the Board of Directors for Applied Computational Electromagnetic Society (ACES).

*Refreshments will be served.*

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