

电磁学研究进展系列讲座信息

时间：2016年8月12日 9:00-12:00

地点：江苏师范大学 江苏省教育大数据科学与工程重点实验室 204 会议室

报告一: Agostino Momorchio 教授, 意大利披萨大学

报告题目: Electromagnetic Compatibility (EMC) and Electromagnetic Interference Control (EMIC) of radiating equipment in complex systems: computational methods, procedures and validation measurements for optimal antennas layout

报告摘要: EMC and EMIC of complex systems are nowadays more reliable and predictable due to the accuracy of available computational methods, allowing a robust design of antennas layout. The aim is to optimize the location of radiating subsystem so to minimize undesired interference and workers' exposition (if present), allowing at the same time the best performance of each subsystem. State-of-the-art computational methods will be shown, together with a system approach, following some practical test cases encountered in our research laboratory. The measurement campaign will be also shown so to validate the entire procedure.

报告人简介: **Agostino Monorchio** is a Professor at the University of Pisa. He spent several research periods at the Electromagnetic Communication Laboratory at Pennsylvania State University (USA), both as a recipient of a scholarship (Fellowship Award) of the Summa Foundation, New Mexico (USA), and in the framework of CNR-NATO Senior Fellowship program. He has carried out a considerable research activity and technical consultancy to national, EU and U.S. industries, coordinating, as principal scientific investigator, a large number of national and European research projects. He serves as reviewer for international journals, and he was Associate Editor of IEEE Antennas and Wireless Propagation Letters from 2002 to 2007. Prof. Monorchio is active in a number of areas including computational electromagnetics, microwave metamaterials, radio propagation for wireless systems, the design and miniaturization of antennas and electromagnetic compatibility, biomedical microwaves applications. The activity is mainly carried out at the Microwave and Radiation Laboratory (www.mrlab.it) of the Department of Information Engineering, University of Pisa, together with a large group of PhD students, Post-Docs and research associates. He is a member of RaSS National Laboratory of CNIT and in 2010 he affiliated with the Pisa Section of INFN, the National Institute of Nuclear Physics. His research results have been published in more than 100 journal papers and book chapters, and more than 200 communications at international and national conferences, he is co-author of 4 patents. In 2012 he has been elevated to Fellow grade by the IEEE for his contributions to computational electromagnetics and for application of frequency selective surfaces in metamaterials.

报告二: **Constantine Balanis** 教授, 美国亚利桑那州立大学

报告题目: Smart Antennas and Beamforming Techniques

报告摘要: Smart antenna systems are capable of efficiently utilizing the radio spectrum, and they are a promise for an effective solution to meet the desired performance demands in network and communication systems. Smart antenna technology has been considered for mobile platforms such as automobiles, cellular phones (mobile units), and laptops. Smart antennas integrate many technologies, including antennas, digital signal processing, communications and networks. The advancement and integration of the characteristics of each of these areas is critical to the efficiency and performance of a communication system channel, as measured by Bit-Error-Rate (BER) and network. This presentation will review the basic principles of smart antennas, and present and compare the BER and Throughput of antenna array geometries.

报告人简介: **Constantine A. Balanis** (S'62 - M'68 - SM'74 - F'86 - LF'04) received the BSEE degree from Virginia Tech, Blacksburg, VA, in 1964, the MEE degree from the University of Virginia, Charlottesville, VA, in 1966, and the Ph.D. degree in Electrical Engineering from Ohio State University, Columbus, OH, in 1969. From 1964-1970 he was with NASA Langley Research Center, Hampton VA, and from 1970-1983 he was with the Department of Electrical Engineering, West Virginia University, Morgantown, WV. Since 1983 he has been with the School of Electrical, Computer and Energy Engineering, Arizona State University, Tempe, AZ, where he is Regents' Professor. His research interests are in computational electromagnetics; flexible and reconfigurable antennas; low-profile and conformal high impedance surfaces (HIS); and smart antennas. Over the years, he received many awards and recognitions. Dr. Balanis is a Life Fellow of the IEEE, and he is the author of *Antenna Theory: Analysis and Design* (Wiley, 2016, 2005, 1997, 1982), *Advanced Engineering Electromagnetics* (Wiley, 2012, 1989) and *Introduction to Smart Antennas* (Morgan and Claypool, 2007), and editor of *Modern Antenna Handbook* (Wiley, 2008) and for the Morgan & Claypool Publishers, series on Antennas and Propagation series, and series on Computational Electromagnetics.

报告三：Atef Elsherbeni 教授，美国科罗拉多矿业大学

报告题目：Recent Developments in Computational Electromagnetics using The Finite Difference Time Domain Method

报告摘要：This presentation will focus on recent developments in the finite difference time domain method for electromagnetics and antenna applications. First a brief introduction to the method, its capabilities, and the type of lumped circuit elements, linear and non-linear, which can be integrated into an electromagnetic simulation will be presented. Next the analysis and performance of the newly developed absorbing boundary based on the impedance boundary condition will be detailed. The performance of this boundary condition will be assessed by numerical examples containing comparisons with the traditional CPML boundary. The hardware speed up of these methods on several GPU architectures and by using different programming languages will be highlighted.

报告人简介：Atef Z. Elsherbeni received his Ph.D. degree in Electrical Engineering from Manitoba University, Winnipeg, Manitoba, Canada, in 1987. Dr. Elsherbeni was with the University of Mississippi from 1987 to 2013. He was a Finland Distinguished professor from 2009 to 2011. In August 2013 he joined Colorado School of Mines where he is now the Dobelman Distinguished Chair Professor and the Electrical Engineering Division Director. His research interest includes the scattering and diffraction of EM waves, finite-difference time-domain analysis of antennas and microwave devices, field visualization and software development for EM education, interactions of electromagnetic waves with the human body, RFID and sensor integrated FRID systems, reflector and printed antennas and antenna arrays, and measurement of antenna characteristics and material properties. Dr. Elsherbeni is a Fellow member of IEEE and ACES. He is the Editor-in-Chief for ACES Journal. He was the general Chair for the 2014 APS-URSI Symposium and was the president of ACES Society from 2013 to 2015.