

Distinguished Lecture

New Considerations for Antennas Near Fields and Impact on Characterizing Antenna Systems and other Applications

by

Dr. Yahia Antar

Professor and Canada Research in Electromagnetic Engineering,

Royal Military College of Canada & Queen's University Kingston, Ontario, Canada

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Venue : Room 15-202, 15/F, meeting room of State Key Laboratory of Millimeter Waves, 15/F, Academic 3, City University of Hong Kong

Abstract

There is a growing interest within the applied electromagnetic community in designing electromagnetic systems involving parts and subsystems interacting at close distances to meet emerging applications. Examples are compact antenna arrays, wireless devices working in dense and crowded electromagnetically changing environments such as MIMO (Multiple Input Multiple Output) and DoA (Directional of Arrival) applications, miniaturized circuits and radiators, near-field communication, and wireless energy transfer. A common denominator in all of these applications is the existence of the problem of illumination by and/or interactions of near fields. In theory, the near field is much more complex than the far field or waveguide modes. Until recently there was no comprehensive theory that explains the near field structure. This presentation will describe a newly developed fundamental approach to the near field structure around antenna systems and the possible implication on antenna design and the electromagnetic environment. Applications to antenna synthesis, MIMO systems design, and other aspects of antennas design will be discussed.

Biography

Dr. Yahia Antar obtained degrees from the University of Alexandria (BSC) and the University of Manitoba (MSc., PhD). He worked at CRC and NRC in Ottawa before joining the staff of the Department of Electrical and Computer Engineering at the Royal Military College of Canada in Kingston where he has held the position of professor since 1990.

Dr. Antar is a Fellow of the IEEE (Institute of Electrical and Electronic Engineers) and a Fellow of the Engineering Institute of Canada (FEIC). He served as an Associate Editor (Features) of the IEEE Antennas and Propagation Magazine and as Associate Editor of the IEEE Transactions on Antennas and Propagation, IEEE AWPL. He served on NSERC grants selection and strategic grants committees, and on review panels for the National Science Foundation.

In May 2002, Dr. Antar was awarded a Tier 1 Canada Research Chair in Electromagnetic Engineering which was renewed in 2009. In 2003 he was awarded the Royal Military College of Canada “Excellence in Research” Prize and in 2012 the Class of 1965 Teaching Excellence Award. He was elected to the URSI Board as Vice President, and served on the IEEE Antennas and Propagation Society Administration Committee. In January 2011, Dr. Antar was appointed Member of the Canadian Defence Advisory Board (DAB). In October 2012 he received from the Governor General of Canada, the Queen’s Diamond Jubilee Medal in recognition for his contribution to Canada. He is the recipient of the 2014 IEEE Canada RA Fessenden Silver Medal. In 2015 he was the recipient of the IEEE Canada J. M. Ham Outstanding Engineering Educator Award and the 2015 RMC Cowan Prize for excellence in research.

*** ALL ARE WELCOME ***

Enquiries:

Prof Chi Hou Chan, State Key Laboratory of Millimeter Waves

Tel.: 852-3442 9360 Fax: 852-3442 0353 E-mail: eechic@cityu.edu.hk