

IEEE JOINT CHAPTER MEETING
PCJS AP/ED/MTT, NJ Coast EMC/VT/AP & WIE, NNJ AP/MTT, and Rutgers WIE
Mobile or Terminal Antennae Design

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Directions: <http://rumaps.rutgers.edu/?q=bnum:3869> or <http://ruccs.rutgers.edu/~aleslie/map.html>

Register: http://meetings.vtools.ieee.org/meeting_view/list_meeting/6773 (Refreshments to be provided)

Abstract - Nowadays, the access to mobile communications not only through mobile telephones, but also other kinds of portable devices such as notebooks or PDAs, equipped with PCMCIA cards, allows providing almost universal connectivity, with access to public or private networks. Therefore, both cellular standards, such as the GSM family and third generation standards such as UMTS, as well as unlicensed networks, like WLAN, should be accessible with a single device. However, the limited space available for the antenna and the small overall size of the terminal are often the reason for the narrow band characteristics of the resulting antennas. This problem becomes even more serious when a multiband or an ultra-wideband antenna has to be designed. Also, only a careful design of the antenna taking into account the interaction both with the handset components and the human user can lead to satisfying solutions that fulfill the given requirements for mobile communications handsets. Their design is, however, no trivial task due not only to the extensive requirements of modern antennas, but also to plethora of physical factors that impinge on their performance, such as the close proximity of electronic components. However, in the design of antennas for commercial applications, the designer has to take into account many issues not directly related to the antenna itself. Antenna engineers have to interact with other departments, to satisfy all the requirements in terms of, for example, mechanical stability, aesthetical design or compliance testing. Thus, the design must be able to adapt the antenna concept to eventual changes in the device or the specifications. Although the use of powerful software packages has allowed the precise simulation of antennas in such a complex environment, they are useless without an in-depth knowledge of electromagnetic theory and experience in solving such problems. Dr. Martínez-Vázquez has been involved in the design of antennas for mobile communications both from the academic and the industrial point of view, which allows her to have a global view on the problems related to this topic.

Bio – Marta Martínez-Vázquez was born in Santiago de Compostela, Spain, in 1973. She obtained her Dipl.-Ing. and Ph.D. degrees in Telecommunications from the Universidad Politécnica de Valencia, Spain, in 1997 and 2003, respectively. In 1999 she was granted a fellowship from the Pedro Barrié de la Maza Foundation for postgraduate research at IMST GmbH, in Germany. Since 2000, she is a full-time staff member of the Antennas and EM Modelling department of IMST. Her research interests include the design and applications of antennas for mobile communications, planar arrays, sensors, RF systems, and Electromagnetic Bandgap (EBG) materials. Dr. Martínez-Vázquez was awarded the 2004 "Premio Extraordinario de Tesis Doctoral" (Best Ph.D. award) of the Universidad Politécnica de Valencia for her dissertation on small multiband antennas for handheld terminals. She has been a member of the Executive Board of the ACE (Antennas Centre of Excellence) Network of Excellence (2004-2007) and the leader of its small antennas activity. She has also been the vice-chair of the COST IC0306 Action "Antenna Sensors and Systems for Information Society Technologies" (2007-2011). She is a member of the AdCom of the IEEE Antennas & Propagation Society, of the Board of Directors of the European Association of Antennas and Propagation (EurAAP), and of the Technical Advisory Panel for the Antennas and Propagation Professional Network of IET. She has over 50 publications, including books, journal and conference papers and patents. She is a Distinguished Lecturer for the IEEE Antennas and Propagation Society, an Associate Editor of IEEE Antennas and Wireless Propagation Letters and a member of the editorial board of the Radioengineering Journal.