

## Biography of Dirk Manteuffel



**Dirk Manteuffel** was born in Issum, Germany in 1970. He received the Dipl. Ing. degree in electrical engineering from Duisburg University in 1998 and the Dr. Ing. degree from the University of Duisburg-Essen in 2002. In 2004 he received the young scientist award from the Vodafone foundation for science for his research on the analysis and design of integrated mobile phone antennas with special emphasis on the interaction with the user.

From 1998 to 2009 he joint IMST in Germany. As a project manager he was responsible for industrial antenna development and advanced projects in the field of antennas and EM modeling. From 2006 to 2008 he was a visiting professor at the University of Duisburg-Essen. Since 2009 he is a full professor for wireless communications and a director of the Institute of Electrical- and Information engineering at the Christian-Albrechts-University of Kiel. Since 2004 he is a lecturer of the TAE (Technische Akademie Esslingen) and since 2005 he is a member of the board of the ESoA – European School of Antennas. Prof. Manteuffel is inventor of 6 national and international patents and author and co-author of more than 50 scientific publications.

### “Highly-efficient multiple antenna-systems for small MIMO devices”

**ABSTRACT:** Today, every small communicating device must be able to wirelessly transfer or receive high data rates. Consequently there is a strong demand to design multiple antenna-systems able to efficiently operate in diversity or Multiple-Input-Multiple-Output modes. If integrating several radiators operating in different frequency bands in a small device is today a usual task for antenna designers, research on multiple-antennas cooperating within the same frequency band is of great interest. First, the well-known design rules of single antenna-systems for small portable devices must be re-invented to account for several closely positioned radiators and achieve high performance. Then, characterization techniques of single antenna-systems are not completely sufficient to describe the performance of multiple antenna-systems. Several challenges must be addressed in this direction.

In this paper, we propose to focus on highly-efficient multiple antenna-systems for small MIMO devices. We proceed in three steps, the first one being a state-of-the art review of the best solutions developed by various researchers within the world. Then, we present lots of multiple antenna-systems designed at the LEAT of the University of Nice-Sophia Antipolis since 2004 and we especially focus the new techniques dedicated to enhance the total efficiency of several radiators integrated within the same small ground plane. Lastly we draw a conclusion about what could be the future research in this domain.

**Dirk Manteuffel**

*CWC - Wireless Communications, University of Kiel  
Kaiserstrasse 2, 24143 Kiel, GERMANY  
Email : Manteuffel@tf.uni-kiel.de*