Eng Grad Soc

IDCOM Lunchtime Seminar

Tuesday 23 June 1.00pm

Lecture theatre C

JCMB Building, King's Buildings, EH9 3JL

Professor Andreas F. Molisch

University of Southern California, USA

Channel models and algorithms for massive MIMO

Abstract: Massive MIMO has drawn great attention in the past years, as it promises a dramatic increase in the capacity of multi-user systems, while at the same time simplifying receiver algorithms. However, there are also significant practical challenger, like the cost related to a massive number of RF chains, so that ingenious new algorithms are required for retaining performance while keeping complexity under control. Many of the algorithms are analysed with very simplified channel models, and it is not immediately obvious whether performance can be retained in more realistic settings. The current talk will first give an overview of channel measurements and modelling specifically for the massive MIMO scenarios. We will then describe a simplified algorithm, called JSDM, that is based on RF pre-processing, and analyse how realistic propagation conditions impact its performance, and how it can be modified to adapt to such conditions.

Biography: Andreas F. Molisch is a Professor of Electrical Engineering and Director of the Communication Sciences Institute at the University of Southern California, Los Angeles. His current research interests are the measurement and modeling of mobile radio channels, ultra-wideband communications and localization, cooperative communications, multiple-input–multiple-output systems, wireless systems for healthcare, and novel cellular architectures. He has published 4 books, 16 book chapters, 170 journal papers, 250 conference papers, as well as 80 patents, and 70 standards contributions. He is a Fellow of the IEEE, Fellow of the AAAS, Fellow of the IET, an IEEE Distinguished Lecturer, and a member of the Austrian Academy of Sciences. He has received numerous awards, most recently the Donald Fink Prize of the IEEE, and the Eric Sumner Award of the IEEE.

Pizza from 12.30pm

AGB Building-2nd floor foyer