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Communication Society

On Digitally-Enhanced Antenna Array Architectures and Co-Design Opportunities

Prof. Gregory W. Wornell
Department of Electrical Engineering and Computer Science
Massachusetts Institute of Technology

Monday, 2 May 2016 @ 10:00AM – 11:00AM

Venue: **Billings Room 3.04, 3rd floor, Electrical & Electronic Engineering Building (226), University of Western Australia, Crawley WA**

This seminar is open to the public and admission is free to all IEEE members and non-members.

Abstract:

With CMOS circuits now able to operate at millimeter wave frequencies, there is the potential to develop new low-cost coherent imaging technology that can enable a host of new applications. The degree to which this potential can be realized depends on how effectively some of the associated new technical challenges can be met. I will discuss some examples of these challenges, and describe a viewpoint that may be useful in addressing them – one that emphasizes tighter interaction between the digital and analog aspects of the system design and signal processing. As illustrations, I'll share a couple of recent but divergent examples of architectures inspired by this framework of thinking: dense delta-sigma arrays, and sparse multi-coset ones.

Biography:

Greg Wornell has been on the MIT faculty since 1991, where he is the Sumitomo Professor of Engineering in the department of Electrical Engineering and Computer Science, and the Research Laboratory of Electronics. He did his graduate work also at MIT in EECS and his undergraduate work at the University of British Columbia. His research interests span a variety of aspects of signal processing, information theory, digital communication, and statistical inference, and include algorithms and architectures for wireless networks, sensing and imaging systems, and multimedia applications, among others.