



Special Issue on
Practical Physical Layer Techniques for 4G Systems & Beyond

The tremendous growth of cellular users over the last decade has called for higher spectral efficiency and better coverage while maintaining a low power consumption and cost. While early deployments of pre-4G networks support maximum downlink data rates of 100Mbps, the recent proliferation of multimedia applications and services and smartphones has led to a growing demand to support data rates that exceed 1Gbps. This has boosted interest in fundamental as well as applied research on the components and algorithms for 4G systems and beyond.

Several practical challenges in the physical layer need to be addressed in order to support such high data rates. These challenges include channel sounding, feedback, codebook design for multi-user MIMO systems, multiple access techniques, noise and interference management, receiver equalization, capacity enhancement, and other similar problems. Interference alignment techniques are also important in the context of cellular systems, which are interference limited. This Special Issue welcomes original work from both researchers and practitioners that explores recent advances in practical approaches to realize multiuser and network MIMO, cognitive radio, co-operative, and energy-efficient communications.

Topics

Topics of interest for the special issue of the Journal of Communications include, but are not limited to:

- Co-operation for interference alignment/management
- Multi-cell, multi-hop cooperation
- Multiuser MIMO and co-operative diversity techniques
- Network MIMO
- Distributed antenna systems
- Cognitive radio systems
- Radio resource management
- User scheduling in single-cell and multi-cell environments
- Joint physical and MAC layer design utilizing MU-MIMO and resource allocation
- Channel sounding techniques for multiuser MIMO
- Feedback techniques and codebook design
- Modulation and coding for wireless channels
- Diversity and equalization techniques
- Digital signal processing for wireless applications
- Multi-radio co-existence
- Mobile-to-mobile communications
- MIMO systems with energy constraints
- Green communications (e.g., energy efficient modulation, coding, and resource allocation)
- Location and tracking

Important Dates

Submission Deadline	December 1, 2010
Review Result Notification	April 1, 2011
Final Manuscript Due	May 1, 2011
Tentative Publication Date	3rd Quarter, 2011

Submission

Prospective authors should submit high quality and original contributions that have neither appeared nor are under consideration in any other journals. Submissions should follow the guidelines of Journal of Communications, which can be found at: <http://www.academypublisher.com/jcm/forauthors.html>. Manuscripts should be submitted electronically to the corresponding Guest Editor (Sudhanshu Gaur, sudhanshu.gaur@hal.hitachi.com).

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