

32. Treffen der VDE/ITG-Fachgruppe 5.2.4
Mobilität in IP-basierten Netzen
am 18. Februar (Open Workshop) und 19. Februar 2010 in Darmstadt

Call for Contributions

Within its series of round tables, the VDE/ITG Section 5.2.4 "Mobility in IP-based Networks" will organize a one day workshop on the topic

**Interference Management and Cooperation Strategies in
Communication Networks**

The workshop will take place at Technische Universität Darmstadt on February 18th, 2010. We solicit

- Technical overview presentations
- Project presentations
- Presentations of results of ongoing research
- Visionary (possibly provocative) presentations

Interference is an inherent effect in communication networks. In mobile radio communication, interference is traditionally avoided by applying orthogonal basis functions in the allocation of radio resources which results in well known concepts such as TDMA, FDMA or CDMA. The number of orthogonal basis functions, however, is limited. Furthermore, orthogonality among the basis functions cannot be strictly maintained in practice or only accepting inefficiency like in cellular reuse systems. This limits the total capacity of mobile radio networks.

Over the last ten years, new findings in the field of multiuser information theory lead to a paradigm shift in the treatment of interference. Techniques such as multiuser detection or interference cancellation abandon the orthogonal allocation of resources in favour of approaches that jointly encode or decode several signals. Currently, the focus is put on the management of interference. For example decentralized approaches based on game theory negotiate the amount of interference that may be generated. Thus, they avoid interference in congested areas. Furthermore, approaches in the field of network information theory and network coding theory depart from the consideration of single radio links to techniques that take the whole network into account. The transmission of information is distributed over several links and nodes and interference is thus used in order to transmit information, resolving the problem of interference.

The objective of this workshop is to create a forum to exchange ideas and share experiences in these fields among researchers, professionals, and application developers both from industry and academia. Topics of particular interest include but are not limited to theoretical and practical work from the following fields:

- Interference management: avoidance, cancellation, balancing, cooperation
- Interference alignment
- Network coding
- Use of self-interference to increase diversity
- Non orthogonal medium access
- Interference aware MIMO precoders
- Interference in relaying and multi-hop networks
- Controlled intentional interference emission
- Channel state information (CSI) and feedback for interference management
- Interferences between different radio network layers (e.g. femto-cell/macro-cell)
- Interferences between different radio access technologies

Please inform the workshop organisers about your planned contribution by Jan. 11th, 2010. The number of contributions is limited and assigned on a first come first serve basis. Participants should register by email by Feb. 3rd, 2010. More details about the ITG/VDE meeting will be available soon via the webpage. For further questions, please do not hesitate to contact the workshop organizers:

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