

RAWNET/WNC3 2009

The 5th workshop on Resource Allocation, Cooperation and Competition in Wireless Networks

in conjunction with

the 7th Intl. Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt'09)

27 June 2009, Seoul, Korea

<http://www.rawnet.org/>

Welcome to RAWNET/WNC3

Future telecommunications networks are expected to provide very high data rates, seamless connections, at higher and often heterogeneous quality-of-service levels, in scenarios with ever increasing mobility. In order to meet these requirements, new generation wireless networks go beyond the classical paradigms of cellular networks and are based on complex interactions. In this scenario, efficient allocation of the available resources and/or cooperation, and/or competition play a strategic fundamental role to increase and optimize communication performance of individual nodes or of the global network, and efficiently exploit the available frequency spectrum eventually admitting unlicensed users. This fuelled a vibrant flurry of studies in cooperative communications, spectrum management (cognitive radio), and resource allocation. The investigations involve researchers and technicians from the physical, to the networking layers and above and eventually promote joint design within different layers (cross-layer design). Analysis and design of the complex interactions in future communications networks requires contributions from a variety of disciplines, which span from information theory to statistical physics, game theory, optimization, non-commutative algebras and so forth.

The workshop promotes the applications of new methodologies in this field with the aim of providing the participants advanced and innovative tools able to catch the fundamental dynamics of complex interactions. It fosters the presentation of new cooperative protocols and new schemes for resource allocation, novel results in the investigation of the theoretical limits and fundamental tradeoffs between competition and cooperation. The applications can stem from any wireless scenario, from multicell networks to sensor and relay networks, cognitive radio or ad hoc network. In fact, object of the workshop is to provide the participant with a comprehensive, thorough, and unified vision of the resource allocation issue in complex multiuser and multiprovider networks regulated by cooperation and competition.

Keynote Talks

Prof. Anthony Ephremides (University of Maryland)

COOPERATION AT THE NETWORK LEVEL

Prof. Gerhard Kramer (University of Southern California)

CODING FOR COOPERATION AND RELAYING

Topics of Interest

- User scheduling (single cell/multicell/OFDMA/relay-multihopping network);
- Cross-layer design;
- Power-control and energy efficient communications;
- Resource allocation-based interference mitigation;
- Cooperation schemes for interference control, coverage extension (multicell, multi-hop cooperation);
- Game theoretic resource allocation;
- Spectrum management, i.e. resource allocation in cognitive radio;
- Pricing based, auction based schemes in ad-hoc/cellular networks;
- Fairness vs performance issues;
- Relay selection, cooperative group optimization and resource allocation;
- Scaling laws and information theoretic bounds;
- Diversity/multiplexing trade-offs of cooperation protocols;
- Effect of partial and incomplete channel state information in cooperative systems, and robust designs;
- Practical issues in cooperation strategies for mobile ad-hoc and sensor networks.

Submission Guidelines

The submission will be handled electronically via EasyChair system at <https://www.easychair.org/>. Submitted manuscripts should not exceed 8 pages in length. Please use the IEEE Transactions format, 11 pt character size, one column text, one-and-a-half line spacing, letter paper. This page budget should contain all figures, tables, references, etc. The manuscript should also include a brief abstract of up to 150 words. Only PDF files are acceptable; please make sure that the paper prints without problems (take care to embed all required fonts, etc.).

The workshop proceedings will be listed in the IEEEXplore and the IEEE digital library.

Workshop Chairs

Konstantin Avrachenkov (INRIA Sophia Antipolis)

Laura Cottatellucci (Eurecom)

Ralf Müller (NTNU)

Technical Program Committee

Eitan Altman (INRIA Sophia Antipolis)

Randall Berry (Northwestern University)

Sem Borst (Eindhoven University)

Ron Dabora (Stanford University)

Merouane Debbah (Supélec)

Rachid El Azouzi (University of Avignon)

David Gesbert (Eurecom)

Michael Honig (Northwestern University)

Eduard Jorswieck (TU Dresden)

Erik Larsson (Linköpings)

Ritesh Madan (Qualcomm)

Daniel Palomar (UST)

Bozidar Radunovic (Microsoft Research Cambridge)

Stavros Toumpis (Athens UEB)

Important Dates

Extended submission deadline: March 15, 2009

Notification of acceptance: April 1, 2009

Camera-ready papers due: May 1, 2009

Early registration deadline: TBD