



Special Session:

Non-orthogonal multi-user transmissions for next-generation wireless networks

The Special Session will be part of the 14th International Symposium on Wireless Communication Systems (ISWCS 2017), technically co-sponsored by the IEEE Communications Society (ComSoc), to be held in Bologna, Italy, on August 28-31, 2017. Paper submissions are invited on the Special Session topic.

Special Session papers will be reviewed by the TPC of ISWCS 2017; they will be part of the Conference Proceedings and they will be uploaded to IEEE Xplore.

Call for Papers

To overcome the imminent radio frequency spectrum crunch, next-generation (5G and beyond) wireless networks must reach unprecedented levels of spectral efficiency. While existing wireless transmissions in licensed spectrum are built to be almost immune from any kind of external interference, the cost of the associated bandwidth is very high. On the other hand, transmitting in unlicensed spectrum portions is an affordable alternative, but the design has to deal with the problem of the interference generated to/from other systems. One possible solution for bringing down the cost per Hertz of licensed transmissions is the use of *non-orthogonal multiple access* (NOMA), which multiplexes licensed users in power and/or code domains. On the other side, a clever combination of *cooperation* and *non-orthogonal cognitive radio* (NOCR) approaches allows unlicensed users to superimpose their transmissions on licensed signals, by maintaining or even improving the performance of licensed networks. NOMA and cooperative NOCR are two sides of the same coin, both based on the concept of multiuser superposition transmission, whose employment is envisioned to result in significant network capacity gains. The challenging goal to significantly improve spectrum efficiency of next-generation wireless networks calls for a fruitful exchange of ideas between NOMA and cooperative NOCR, as well as their smart combination and integration in practical applications.

We invite authors to present original and unpublished articles reporting cutting-edge research achievements in non-orthogonal multiuser transmission schemes. Potential topics include but are not limited to:

- Low-complexity implementation of NOMA and cooperative NOCR
- Combination of NOMA and cooperative NOCR
- Non-orthogonal resource allocation in multi-dimensional space (frequency, time, spatial, power, and code domains)
- Joint optimization of spectral efficiency and user fairness for non-orthogonal transmissions
- Impact of imperfect network state information on NOMA and NOCR systems
- Performance assessment of NOMA and cooperative NOCR schemes
- Simulation tools, benchmarks and testbeds regarding NOMA and cooperative NOCR
- Latest international standardization developments for multiuser superposition transmission

Submission Guidelines

Prospective authors are invited to submit high-quality technical papers (max 6 pages) using standard IEEE conference templates that can be downloaded from the link <http://iswcs2017.org/call-for-papers/>. The proposal should be submitted by the deadline, via the EDAS link: <https://edas.info/newPaper.php?c=23468&track=85443>

Key Dates

- Paper submission: Thursday, May 4, 2017
- Acceptance notification: Friday, June 16, 2017

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