

CALL FOR PAPERS

PIMRC 2019 SPECIAL SESSION: PHYSICAL LAYER SOLUTIONS FOR 6G

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As of the second quarter of 2019, the first commercial fifth generation (5G) wireless networks have been already deployed, in part or as a whole, at certain countries while the first 5G compatible mobile devices are being introduced to the market. Although the initial stand-alone 5G standard, which was completed in 2018, has brought more flexibility to the physical layer by exploiting millimeter-waves and multiple orthogonal frequency division multiplexing (OFDM) numerologies, researchers have already started to explore the potential of alternative technologies for later releases of 5G. These technologies include index modulation (IM), non-orthogonal multiple access, alternative/advanced waveforms, low-cost massive multiple-input multiple-output (MIMO) systems, terahertz communications, and new antenna technologies. Furthermore, one thing has become certain during the standardization of 5G New Radio: there is no single enabling technology that can support all of the application requirements being promised by 5G networking. Consequently, to address these different user applications and requirements as well as to support connectivity in the massive scale, 5G and beyond radio access technologies (RATs) should have a strong flexibility to support and employ novel physical layer techniques with higher spectral/energy efficiency and lower transceiver complexity. At the first glance, the future 6G technologies may seem as the extension of their 5G counterparts, however, new user requirements, completely new applications/use-cases, and new networking trends of 2030 and beyond may bring more challenging communication engineering problems, which necessitate radically new communication paradigms in the physical layer.

Against this background, the aim of this Special Session is to provide an interactive platform for academia and industry members to timely exchange their most recent research findings associated with beyond 5G physical layer solutions. In this context, papers are solicited reporting on the following representative and important topics, but not limited to:

- Alternative waveforms for beyond 5G
- Non-orthogonal multiple access solutions
- Index modulation schemes
- Large intelligent surfaces/reflect-arrays/materials
- Multiple antenna technologies for 6G
- Machine learning in wireless communications
- Millimeter-wave and Terahertz communications
- Visible light communication systems
- Physical layer solutions for non-terrestrial networks
- Interference management (Avoidance, cancellation, and measurements)
- Beam management (Beam acquisition and tracking)
- Channel estimation and prediction techniques
- New physical layer test and measurement techniques
- Physical layer security techniques

Deadline for paper submission: 21 May 2019

Paper acceptance notification: 21 June 2019

Final papers due: 5 July 2019

Papers should be written in English with a maximum paper length of six (6) printed pages (10-point font) including figures without incurring any page charges. Accepted papers will be published in the PIMRC 2019 Proceedings, and the papers presented by an author at the conference will be submitted to IEEE Xplore.