

Call for Papers**Chairs****Ananthanarayanan Chockalingam**Indian Institute of Science, Bangalore
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Universitat Pompeu Fabra, Spain

Ronny Hadani

Cohere Technologies

Features

- Full-day workshop
- Two keynote speakers
- Three presentation sessions
- Panel discussion

Important DatesTentative paper submission deadline:
15 December 2018Notification of acceptance:
27 January 2019Camera-ready submission:
23 February 2019

The Workshop on Wireless Communications in High-Mobility will be held in Shanghai, China, in conjunction with the IEEE ICC 2019, May 20-24, 2019.

Emerging mass transportation systems – such as self-driving cars, high-speed trains, drones, flying cars, and supersonic flight – will challenge the design of future wireless networks due to high-mobility environments: a large number of high-mobility users require high data rates and low latencies. The physical layer modulation technique is a key design component to meet the system requirements of high mobility.

Currently, orthogonal frequency division multiplexing (OFDM) is the modulation scheme deployed in 4G long term evolution (LTE) mobile systems, where the wireless channel typically exhibits time-varying multipath fading. OFDM can only achieve a near-capacity performance over a doubly dispersive channel with a low Doppler effect, but suffers heavy degradations under high Doppler conditions, typically found in high-mobility environments.

Orthogonal time frequency space (OTFS) modulation has been very recently proposed by Hadani et al. at WCNC'17, San Francisco. It was shown to provide significant advantages over OFDM in doubly dispersive channels. OTFS multiplexes each information symbol over a 2D orthogonal basis functions, specifically designed to combat the dynamics of the time-varying multipath channels. As a result, all information symbols experience a constant flat fading equivalent channel. OTFS is only in its infancy, leaving many opportunities for significant developments on both practical and theoretical fronts.

This workshop aims at presenting the state-of-the-art on the fast evolving research on waveform design for high mobility. The workshop will provide a platform for the dissemination of research. Topics of interest include but not limited to the following:

- High-mobility channel modelling and performance analysis
- Waveform designs for high-mobility
- Detection methods
- Channel estimation methods
- Coding and precoding techniques for high mobility
- MIMO and massive MIMO techniques for high-mobility
- Multiuser communications in high-mobility
- Beamforming in high-mobility
- Applications: 5G and beyond, V2X, mm-wave communications

The workshop accepts only novel previously unpublished papers. All submissions have to be in English with a maximum length of five printed pages (10 point font) including figures, using the IEEE templates.

Conference web site and paper submission web site for the workshop can be found on the conference website:

<http://icc2019.ieee-icc.org/workshop/w08-wireless-communications-high-mobility>