EURASIP Journal on Advances in Signal Processing

Special Issue on
Advances in Single Carrier Block Modulation with Frequency Domain Processing

Call for Papers

WiMAX, based on IEEE standard 802.16 was first developed for broadband internet access to stationary terminals and further enhanced for transmission to and from mobiles. A competing standard for broadband wireless access is 3GPP-LTE extension of the 3GPP standards. Both use OFDMA for downlink transmissions. WiMAX uses OFDMA for the uplink while LTE uses single carrier frequency division multiple access (SC-FDMA) for the uplink. This special issue focuses on variations of single carrier block modulation (SC-BM) with frequency domain processing. These variations are in the family of "generalized multicarrier" transmission schemes and include designations such as SC-FDMA, DFT-precoded OFDMA, interleaved FDMA, and SC-BM.

The main reason for adapting the technology of SC-FDMA for uplink LTE is its low "peak to average power ratio" (PAPR), which is an advantage for mobile devices. Besides, it has almost the same performance as OFDMA, similar complexity, and simple frequency domain equalization for combating dispersive channels.

Recently, many researchers have been studying different aspects of SC-FDMA comparing its performances to other technologies, applying it to more complex channels, such as MIMO, with STC, CDMA spreading, and so forth.

We anticipate that this special issue will become a forum for researchers to summarize recent developments and ideas in this new technology. We invite authors to submit their original research articles, as well as review articles. Topics to be covered include, but not limited to:

- Theoretical aspects of SC-BM
- PAPR characteristics and reduction techniques
- Performance evaluation
- Transmit precoding, Tomlinson-Harashima Precoding (THP) and implementation
- Equalization for SC-BM
- Extension to MIMO
- Multiple access techniques
- SC-BM for optical transmission
- SC-BM with CDMA spreading
- SC-FDMA under high mobility (e.g., ICI mitigation and channel estimation)
- Mitigation of RF impairments in SC-FDMA (e.g., phase noise, I/Q imbalance)
- Resource allocation algorithms for SC-FDMA (e.g., localized versus distributed bandwidth allocations)
- Practical application in LTE

Before submission authors should carefully read over the journal's Author Guidelines, which are located at http://www.hindawi.com/journals/asp/guidelines.html. Prospective authors should submit an electronic copy of their complete manuscript through the journal Manuscript Tracking System at http://mts.hindawi.com/ according to the following timetable:

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