5th IEEE Global Conference on Signal & Information Processing

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Symposium on Signal Processing for Interference Cancellation and Full-Duplex Communication Systems

Call for Papers

General Chair:
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Emerging next generation wireless systems will require new protocols and implementations that can support the exponential increase in number of connected devices and 100s of gigabits of data transmission and reception on resource constrained wireless channels. Full-duplex communication has recently been proposed to improve spectrum usage by enabling simultaneous reception and transmission on the same frequency band with a goal to potentially double spectrum efficiency. However, full-duplex communication requires significant innovation in mitigating interference of the transmitted signal into the receive path of the transceiver. Additionally, cross-interference from additional simultaneous uplink and downlink communications affect network performance limiting spectral efficiency gains. MIMO coupled with full-duplex communication complicates communication system design multi-fold. Field trials have shown the viability of full-duplex communication; however, practical VLSI implementation of both analog and digital signal processing to mitigate interference with low-area and high energy-efficiency are challenging research problems. The focus of this symposium is to present new research on advanced and novel signal processing techniques and low-cost implementations that can enhance both analog RF and digital baseband components of the radio to greatly limit linear and non-linear interference – self and multi-user – to meet the required amount of cancellation to enable full-duplex communication.

Topics of interest include but are not limited to:

- Blind interference cancellation signal processing
- Linear self-interference cancellation signal processing
- Non-linear self-interference cancellation signal processing
- Phase noise and thermal noise cancellation
- MIMO full-duplex precoding techniques
- Multi-user interference cancellation
- FDD interference cancellation
- Full-duplex transceiver design and implementation (analog RF/digital baseband)
- MAC and PHY design co-optimization for full-duplex systems
- Scheduling and synchronization algorithms for full-duplex systems
- Adaptive signal processing for full-duplex systems

Paper Submission: Prospective authors are invited to submit full-length papers (up to 4 pages for technical content including figures and possible references, and with one additional optional 5th page containing only references) or extended abstracts (up to 2 pages), for paper-less industry presentations and Ongoing Work presentations) via the GlobalSIP 2017 conference website. Manuscripts should be original (not submitted/published anywhere else) and written in accordance with the standard IEEE double-column paper template. Accepted full-length papers will be indexed on IEEE Xplore. Accepted abstracts will not be indexed in IEEE Xplore, however the abstracts and/or the presentations will be included in the IEEE SPS SigPort. Accepted papers and abstracts will be scheduled in lecture and poster sessions.

Important Dates:

- **May 15, 2017**: Paper submission due
- **June 30, 2017**: Notification of Acceptance
- **July 22, 2017**: Camera-ready papers due

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