ISWCS 2019
16th International Symposium on Wireless Communications Systems
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27-30 August
Oulu Finland

Organizers

General Co-Chairs:
- Yi Fang, Guangdong University of Technology, China
- Francis C. M. Lau, Hong Kong Polytechnic University, Hong Kong
- Huihui Wu, Columbia University, USA

Technical Program Co-Chairs:
- Pingping Chen, Fuzhou University, China
- Jiguang He, University of Oulu, Finland

Important Dates

Full paper submission: **May 17, 2019 (extended)**
Acceptance notification: June 14, 2019
Camera-ready paper: June 28, 2019
Author registration: June 28, 2019

Workshop: August 27, 2019

Call for Workshop Papers

WS02: Workshop on Error-Correction Codes for Future Wireless Communication Networks

Scope and Topics of the Workshop

Capacity-approaching error-correction codes (ECCs), such as turbo codes and low-density parity (LDPC) codes, have attracted much attention because they can significantly improve the performance of a myriad of communication systems, especially wireless communication systems. Compared with turbo codes, LDPC codes can achieve better performance and faster decoding. As such, LDPC codes have attracted growing interests in both academia and industry. Furthermore, many meritorious variants of LDPC codes were developed in recent years. In parallel with the advances in LDPC-based codes, some other superior codes were conceived. In particular, as the first constructive codes achieving the capacity, Polar codes outperform LDPC codes in certain cases and represent an emerging class of ECCs for future wireless communications. Meanwhile, rateless codes, e.g., LT codes and Raptor codes were extensively investigated to provide a more flexible way for channel coding.

Recently, LDPC codes have been selected for the eMBB data channels for 5G New Radio, while Polar codes have been chosen for the corresponding control channel. Beyond any doubt, LDPC codes, Polar codes, and their variants will find more deployment in many other applications and will be included in other new standards in the future. Nevertheless, the construction methodologies of such codes for the future wireless communication networks are still undergoing development. There are a range of open issues waiting to be further addressed.

This workshop will focus on the theoretical and practical design issues of ECCs for future wireless communication networks. We aim to bring together researchers, industry practitioners, and individuals working on the related areas to share their new ideas, latest findings, and state-of-the-art achievements with others.

- LDPC codes, polar codes, and rateless codes
- LDPC convolutional codes and spatially-coupled (SC) LDPC codes
- Protograph codes and their variants
- Finite-length and infinite-length analytical techniques for ECCs
- Minimum distance distribution analysis for capacity-approaching codes
- Iterative decoding and turbo-like detection algorithms
- Low-complexity LDPC/Polar codes and their hardware implementations
- Artificial-intelligence-assisted channel coding and decoding
- Channel coded modulations
- Channel coding for non-orthogonal multiple access (NOMA)
- Low-density graph codes for source coding
- Channel coding for compressed sensing (CS)
- Joint source-and-channel coding (JSCC)
- Joint channel-and-physical-layer-network coding (JCPNC)
- Coded random access
- Applications of ECCs to physical-layer security and other related areas

Submission Guidelines

Only full papers are considered. The length should not be longer than five A4 pages (in IEEE two-column format, 10pt, according to the IEEE template). Papers must be submitted via EDAS. Accepted and presented papers will be published in the conference proceedings and submitted to IEEE Xplore as well as other Abstracting and Indexing (A&I) databases.