IEEE/CIC ICCC Workshop on Information Theory and Coding for Future Wireless

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Scope (including but are not limited to)

Information theory has been the foundation of communication technology, and channel coding is a pivotal mean to combat channel uncertainties. In every generation of wireless communications, the state-of-the-art channel coding schemes are always adopted to achieve high spectral efficiency and reliability. For future wireless communications, information theory and channel coding will continue to play an important role for the two-fold reasons. First, emerging communication scenarios and applications demand novel information theory. For instance, information theoretic perspective on machine learning and related coding schemes deserves in-depth study with the wide adoption of machine learning algorithms. As wireless access becomes ubiquitous for low-cost devices, a new theory for massive random access is required. In addition, some applications will require a peak data rate to the Tbit/s level, while others operate on extremely low power consumption. Second, new breakthroughs in information theory and coding may bring new paradigm in contrast to the Shannon paradigm. For instance, the underlying principle of semantic information theory analyzes how effective a desired meaning is conveyed. Meanwhile, modern coding techniques such as polar codes, LDPC codes will continue to develop to either meet higher performance requirement or reduce implementation complexity. Topics of interest include but are not limited to:

- Latest information theory results
- Novel design of coding schemes
- Machine learning and coding
- Semantic information theory
- Quantum information and coding
- Turbo, LDPC, polar codes, etc.
- Joint algebraic and probabilistic coding
- Joint source channel coding
- Coded modulation and shaping
- Theoretical bounds on performance

Important Dates and Submission

June 1, 2022 (submission)   July 10, 2022 (Acceptance)   July 24, 2022 (Camera-ready)
Please visit https://iccc2022.ieee-iccc.org/authors/call-for-workshop-papers/ for submission links.