

Call for Papers

Track 4 – WIRELESS COMMUNICATIONS: FUNDAMENTALS AND PHY

Track Chairs:

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Scope and Motivation:

The track on Wireless Communications: Fundamentals and PHY covers all aspects on theory and practice of wireless communications. In particular, topics related to current and future wireless communication systems are encouraged. In addition, papers on physical layer (PHY) techniques, PHY-related network analysis, and design, cross-layer optimization techniques, field trials and applications, fundamental analysis for wireless communication systems are of special interest.

Main Topics of Interest:

This track seeks original contributions in the following areas, as well as others that are not explicitly listed but are closely related

- Beyond 5G/6G mobile communications
- Advanced modulation techniques (OTFS, OFDM, multi-carrier modulation, and waveform design)
- Antennas, beamforming, distributed and hybrid-beamforming techniques
- Cell-free massive MIMO, distributed MIMO, and cloud RAN
- Intelligent reflecting surfaces (IRS), relaying, and diversity techniques
- mmWave/Tera-hertz communication techniques
- Orbital angular momentum (OAM)-based wireless communications
- Joint radar and communications
- Machine-learning techniques for wireless communications
- AI and data analytics for wireless communications
- Data-driven PHY techniques
- Spectrum sharing/cognitive radio techniques and network coexistence
- Drone/UAV communications, non-terrestrial wireless communications
- Wireless power transfer and simultaneous wireless information and power transfer (SWIPT)
- Energy harvesting and sustainable communication techniques
- Green communications & energy efficiency in wireless communications
- Backscatter communications
- Information-theoretical aspects of wireless communications
- Channel modeling, estimation, and equalization techniques
- Fog networks, contents caching, and edge computing techniques
- Non-orthogonal multiple access (NOMA) and various multiple access techniques
- Grant-free access, coded ALOHA, and grant-free NOMA
- Ultra-low latency massive access techniques
- Massive IoT/M2M and wireless sensor networks
- Interference management (coordination, cancellation, and alignment) techniques
- Physical-layer security & Anti-jamming techniques
- Positioning and localization techniques
- Signal processing for wireless communications