

Call for Papers

Emerging Technologies for Metaverse with 6G Massive/Immersive Communications (6G with AR-VR-XR) Workshop

The 21st International Conference on Wireless Communications and Mobile Computing

Website: <http://iwcmc.org/2025/>

Submission Link: <https://edas.info/newPaper.php?c=32921>

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Scope

Metaverse is a vision enabling to integrate the real and virtualized worlds, empowered by various techniques such as artificial intelligence (AI) and extended reality (XR). Given that the core of the Metaverse lies in the interconnection, the advanced sixth-generation (6G) wireless network is considered as an indispensable part of the Metaverse. Based on the three pillar scenarios in the previous fifth-generation (5G) networks, namely, the enhanced mobile broadband (eMBB), massive machine-type communications (mMTC) as well as ultra-reliable and low latency communications (URLLC), the International Telecommunication Union Radiocommunication Sector (ITU-R) has recently endorsed their advanced versions in 6G research. Specifically, the eMBB and the mMTC are enhanced to massive communication and immersive communication, respectively, followed by more stringent requirements. On the one hand, immersive communication, requiring much larger transmission bandwidth than eMBB in 5G, covers a wide range of novel use cases, including the XR and holographic communications, which serves as the building block of the Metaverse. On the other hand, massive communication, the advanced version of mMTC, intends to support connectivity of a huge number of devices, possibly in a relatively small area, and thus to support the realization of the Metaverse. Emerging technologies, such as millimeter-wave/terahertz (mmWave/THz) communications, massive multiple-input multiple-output (MIMO), integrated sensing and communications (ISAC), artificial intelligence (AI), etc., are urgently required to support massive communication and immersive communication and thus to realize the paradigm shifts towards the Metaverse aided by future 6G networks. This workshop serves as a platform to explore innovative solutions that will define the emerging architecture, protocols, and strategies for the Metaverse aided by emerging 6G techniques, with the emphasis on massive communication and immersive communication

Topics

Accepted papers will be published in the IEEE IWCMC 2025 proceedings and will be submitted to the IEEE digital library (IEEE Xplore). Authors are welcome to submit original papers (not published before and/or simultaneously to another venue) with topics that include but are not limited to:

- Intelligent signal processing for Metaverse
- Intelligent communication and networking for Metaverse
- mmWave/THz-based immersive communications
- Extremely large MIMO for massive/immersive communications
- Reconfigurable intelligent surface for Metaverse and 6G
- Integrated sensing and communications for Metaverse
- Satellite and terrestrial network integration in 6G
- Semantic communications for Metaverse and 6G
- Next-generation massive connectivity protocols
- Full Duplex communications for Metaverse and 6G
- Next-generation network architecture
- AI-based spectrum management and allocation
- Network security and privacy in 6G
- AI-based cross-layer optimization for Metaverse and 6G
- Large AI model for Metaverse and 6G
- Generative AI for wireless networks: signal processing and protocols design
- Real-world implementations and use cases

Submitted papers are encouraged to address novel technical challenges or industrial and standard aspects of the key technologies for sustainable and secure cognitive buildings/cities.

Important Dates

Deadlines will follow the main conference announced dates.

Note: Within this workshop, there will be one Best Paper Award.