

IEEE VTC2024-Spring Workshop on Holographic MIMO Communications

Singapore



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Workshop website:

To be announced

Important Dates:

Full paper submissions: **18 January 2024**

Notification of acceptance: **15 February 2024**

Final manuscript: **8 March 2024**

Call for papers:

Future wireless networks are expected to transform to a unified communication, sensing, and computing platform with embedded intelligence and programmability, enabling ubiquitous communications between humans, robots, and other mobile devices. They will also be capable of controlling, sensing, and optimizing the wireless propagation environment to fulfill the visions for low-power, high-throughput, massively-connected, and low-latency communications. Following the recent breakthroughs on the fabrication of programmable metamaterials, the holographic MIMO (HMIMO) paradigm has lately received significant attention from both academia and industry due to its low cost, size, and weight, as well as low-power consumption hardware implementations, providing a transformative means for turning the wireless environment into a software-controlled intelligent platform. This workshop aims to bring together practitioners and researchers from both academia and industry working on fundamental and practically relevant questions related to the many challenges arising from HMIMO systems for communications and sensing.

The organizing committee is inviting submissions of original, unpublished, high-quality research papers focused on (but not limited to) the following topics of interest:

- Electromagnetic information theory for HMIMO communications
- Physics- and electromagnetic-compliant modeling of HMIMO communications
- Experimental results and testbed implementations of HMIMO systems
- Communication-theoretic foundation of HMIMO
- Fundamental performance limits of HMIMO
- Physical-layer algorithms and protocol design of HMIMO
- AI-inspired control and orchestration of HMIMO systems
- Network architectures and transmission protocols for HMIMO
- Transceiver hardware architectures for metasurface-based antennas and HMIMO
- Security and privacy issues of HMIMO.
- Definition of use cases, application scenarios, and techno-economic analysis
- Integration of state-of-art technologies (e.g., mmWave/THz/VLC and IoT) with HMIMO
- Near-field communications, localization, and sensing with HMIMO and reconfigurable intelligent surface (RIS)
- Advanced research for RIS-assisted communications
- RIS-assisted integrated communication and sensing, etc.