



Sustainable Communications for Renaissance

## Call for Papers

### Workshop on Holographic MIMO Communications

#### SCOPE

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 be also 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 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 with immersive sensing capability. 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 holographic MIMO systems for communications and sensing. It will be composed of technical sessions, a panel session, keynote talks, and a session with two relevant demos.

#### TOPICS OF INTEREST

We seek original, completed, and unpublished work not currently under review by any other journal/magazine/conference. Topics of interest include, but are not limited to:

- Physics- and electromagnetic-compliant modeling of holographic MIMO communications
- Experimental results and testbed implementations of holographic MIMO systems
- Communication-theoretic foundation of holographic MIMO
- Fundamental performance limits of holographic MIMO communications
- Physical-layer algorithms and protocol design of holographic MIMO
- AI-inspired control and orchestration of holographic MIMO systems
- Network architectures and transmission protocols for holographic MIMO communications
- Transceiver hardware architectures for metasurface-based antennas and extremely massive MIMO
- Integrated communications and sensing metasurfaces
- Security and privacy issues of holographic MIMO communications
- Definition of use cases, application scenarios, and techno-economic analysis of holographic MIMO
- Integration of state-of-art technologies (e.g., mmWave/THz/VLC, IoT, UAV) with holographic MIMO
- Near-field beamforming, localization, and sensing with holographic MIMO

#### PAPER SUBMISSION

All papers for workshops should be submitted via EDAS.

Full instructions on how to submit papers are provided on the IEEE ICC 2023 website: <https://icc2023.ieee-icc.org/>

#### WORKSHOP CO-CHAIRS

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#### IMPORTANT DATES

**Paper Submission Deadline:**

20 January 2023

**Paper Acceptance Notification:**

6 March 2023

**Camera Ready and Registration for  
accepted papers:**

15 March 2023

#### WEBPAGE LINK

[sites.google.com/view/hmimo-icc2023-workshop/](https://sites.google.com/view/hmimo-icc2023-workshop/)