

2026 IEEE 26th International Conference on Communication Technology

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ZHUHAI, CHINA

Special Session 5 AI and Digital Twins for Channel Modeling, Estimation and Prediction

This Special Session focuses on the convergence of artificial intelligence and digital twin technologies for intelligent wireless channel modeling, estimation, and prediction. As communication systems evolve from 5G toward 6G, the increasing complexity of propagation environments—massive MIMO, millimeter-wave, terahertz, and reconfigurable intelligent surfaces—poses fundamental challenges to conventional statistical channel models. This session explores how deep learning, generative AI, and digital twin networks can create high-fidelity virtual channel environments that mirror physical propagation spaces in real time. Topics include data-driven channel parameter identification, physics-informed neural network integration, and twin-assisted end-to-end link emulation. By bridging the physical and digital domains, these approaches aim to overcome the accuracy and latency limitations of traditional channel acquisition methods, providing essential theoretical foundations and technical enablers for intelligent optimization and autonomous operation of next-generation communication systems.



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Topic of Interest

- AI-Driven 6G Channel Modeling
- Digital Twin Networks for Wireless Channel Emulation
- Deep Learning Architectures for Real-Time Channel Estimation
- Physics-Informed Neural Networks for Channel Prediction
- Generative AI for Synthetic Channel Data Generation
- Transfer Learning for Cross-Scenario Channel Adaptation
- Federated Learning for Privacy-Preserving Channel Estimation
- Graph Neural Networks for Network-Level Channel Modeling
- Reinforcement Learning for Adaptive Channel Prediction
- Digital Twin-Assisted End-to-End Link Simulation

Important Dates

Submission Due:	2026-July 1st
Notification Due:	2026-July 25
Camera-ready Due:	2026-August 10

Submission



Submission Link:
<https://easychair.org/conferences/?conf=icct2026>
(Please choose Special Session 5)