

**IEEE AWPL Special Cluster 2026 on
“AI/ML-driven Wireless Propagation and Channel Modeling”**

Wireless channels are the foundation of communication systems, and the integration of Artificial Intelligence (AI)/Machine Learning (ML) has opened a transformative paradigm for channel modeling, environmental sensing, simulation, and estimation. This Special Cluster aims to gather cutting-edge research that leverages AI/ML to address key challenges in wireless propagation and channel modeling, supporting the advancement of 5G-Advanced, 6G, and beyond systems.

The purpose of this special cluster is to provide a forum to disseminate the latest research addressing AI/ML-driven innovations in wireless propagation and channel modeling, a transformative direction for advancing 5G-Advanced, 6G, and beyond communication systems. We invite researchers to contribute original papers that describe emerging AI/ML-based methods, frameworks, and applications that advance the state-of-the-art in channel characterization, estimation, prediction, simulation, and propagation environment sensing. Furthermore, the topic area extends to include the intricacies of AI/ML integration tailored specifically for addressing non-stationary, heterogeneous, and complex 6G channel scenarios. The editors welcome theoretical and experimental works that address the following topics:

- AI/ML-driven channel parameter estimation and real-time channel estimation
- Data-driven channel prediction, inference, and radio-map generation
- Deep learning-based mapping between propagation environments and channel characteristics
- AI-enabled channel simulation frameworks and propagation environment reconstruction
- ML-optimized array signal processing for channel characterization
- AI/ML-driven interference prediction, mitigation, and dataset-driven modeling
- AI applications in 6G channel measurements, non-stationary channel modeling, and heterogeneous scenario adaptation

The Guest Editors of this Special Cluster are:

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Prospective authors are encouraged to contact the Guest Editors for any questions or to determine the suitability of their contribution for this special cluster. Papers should be prepared following the same submission instructions as for regular IEEE AWPL manuscripts (four-pages technical content maximum and one reference page, double-column, IEEE format), available via the Information for Authors website. The authors should indicate in the cover letter to the Editor-in-Chief that the manuscript is being submitted in response to the Call for Papers for the focused cluster. Prospective authors should refer to the timeline below for key dates.

Key dates:

- Submission deadline: **March 31, 2026**
- First decision: May 15, 2026
- Revised manuscripts deadline: June 15, 2026
- Final decision: July 30, 2026
- Final manuscripts due by: September 1, 2026
- Online publication: Shortly after final manuscript submission
- Cluster publication: November (or December) 2026 issue of AWPL