

Track 14. Reconfigurable Intelligent Surfaces

To support high-speed and seamless data services in future wireless systems, a variety of transmission techniques exploiting the implicit randomness of the wireless environment has received increasing attention, such as massive MIMO. However, these techniques require extra hardware implementation with inevitable power consumption. Further, since these techniques only passively adapt to wireless environments, the quality of service is not always guaranteed in harsh propagation environments. To cope with these challenges, reconfigurable intelligent surfaces (RIS) serve as a promising solution. A RIS is a planar structure that is engineered to have properties that enable the dynamic control of the electromagnetic waves. Benefitted from such a programmable characteristic, RIS serves as a part of reconfigurable propagation environment, which directly reflect signals towards receivers without extra power sources or hardware, thereby improving link quality and coverage. This track focuses on attracting novel and solid contributions on the emerging topic of RIS for future wireless communication.

Topics

- ▶ Channel modeling and estimation for RIS-based wireless communications
- ▶ Fundamental performance limit of RIS assisted wireless communications
- ▶ Joint active and passive beamforming design for RIS-empowered wireless networks
- ▶ Multiple Access design for RIS-empowered wireless networks
- ▶ Testbed and experimental results of RIS
- ▶ AI-inspired design and management of RIS-based network
- ▶ Reconfigurable holographic surface (RHS)-empowered wireless communications
- ▶ RHS-based integrated sensing and communication

Track Chairs**Jian Chen***Northeastern University, China***Shuhao Zeng***Princeton University, USA***Submission Instruction****Submission Link:**<https://easychair.org/conferences/?conf=icct2025> and select Track 14**Template Paper (Word):**<https://www.ieee-icct.org/IEEEtemplate-word.doc>**Template Paper (LaTeX):**<https://www.ieee-icct.org/ieee-conference-latex-template.zip>**Important Dates**

Paper Submission Deadline: May 25, 2025

Notification of Acceptance: June 25, 2025

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