



## Reconfigurable Intelligent Surface-Aided MIMO Systems: Challenges and Trends

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### Message from the Guest Editors

The recent development of reconfigurable intelligent surfaces (RIS) has challenged the perception that wireless communication environments are unmanageable. As a result, RIS has emerged as one of the most eminent technologies for the envisioned enhanced mobile broadband (eMBB) and massive machine-type communication required in for next-generation 6G networks. However, signal processing, channel acquisition, low-complexity system design, and adaptive optimization are all hurdles faced by the deployment of RIS in communication networks. Topics of this special issue include, but are not limited to, the following:

- Channel modeling and estimations in RIS-aided MIMO systems;
- Performance limits of RIS-aided MIMO systems;
- Signal processing and machine learning for RIS-aided MIMO systems;
- Deployment and network optimization for RIS-aided MIMO systems;
- RIS-aided RF sensing and localization;
- Low-complexity RIS-aided beamforming scheme;
- Emerging applications of RISs;
- Integration of RISs with existing wireless technologies (massive MIMO, millimeter-wave communication, THz communication, D2D communications, UAV communications, energy harvesting).





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