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# "Channel Estimation for Reconfigurable Intelligent Surface aided systems"

Monday, September 23, 2024, 11.00 am – 12.00noon

Kirchoffbau, K2001

Abstract: Reconfigurable intelligent surface (RIS) is a promising device that can reconfigure the electromagnetic propagation environment through adjustment of the phase shifts of its reflecting elements. In this talk, I will introduce the works on channel estimation for RIS-aided systems, focusing on reducing estimation overhead, mitigating error propagation, and addressing parameter estimation ambiguities. Due to the passive nature of RIS, the transmitter-RIS and RIS-receiver channels are cascaded and cannot be separated without ambiguity. The cascaded channel state information (CSI) is sufficient for most RIS applications. Thus, we first cleverly construct a virtual transmitter-RIS channel based on estimated CSI to reduce estimation overhead in multi-user scenarios. To address estimation ambiguity, we further proposed a dual-link transmission strategy to obtain the actual CSI of the transmitter-RIS link, beneficial for applications of RIS-aided sensing, active RIS, and beyond-diagonal RIS.

Short biography

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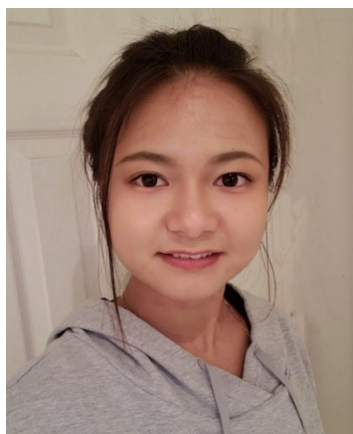
Gui Zhou received the B.S. and M.E. degrees from the School of Information and Electronics, Beijing Institute of Technology, Beijing, China, in 2015 and 2019, respectively, and the Ph.D. degree from the School of electronic Engineering and Computer Science, Queen Mary University of London, U.K. in 2022. She is currently a Humboldt Post-Doctoral Research Fellow with the Institute for Digital Communications, Friedrich-Alexander-University Erlangen-Nuremberg (FAU), Erlangen, Germany. Her major research interests include reconfigurable intelligent surfaces (RIS) and sensing assisted intelligent communication system. She has published more than 30 papers and received best paper awards from IEEE WCSP 2022. She currently serves as an editor for the SCI journal IEEE Transactions on Communications.