

## **Reconfigurable Intelligent and Holographic Surfaces for Wireless Communications**

**Abstract:** A Reconfigurable Intelligent Surface (RIS) is a planar structure that is engineered to have properties that enable the dynamic control of the electromagnetic waves. In wireless communications and networks, RISs are an emerging technology for realizing programmable and reconfigurable wireless propagation environments through nearly passive and tunable signal transformations. RIS-assisted programmable wireless environments are a multidisciplinary research endeavor. This presentation is aimed to report the latest research advances on modeling, analyzing, and optimizing RISs for wireless communications with focus on electromagnetically consistent models, analytical frameworks, and optimization algorithms. In addition, the interplay between RISs and holographic surface-based transceivers will be discussed with focus on near-field communications in line-of-sight channels.