

Sensing RIS

Authors

Abstract

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Index Terms

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I. SYSTEM MODEL

A. MISO case

Signal model:

$$y = \mathbf{f}^H \mathbf{\Theta} \mathbf{G} \mathbf{w} s + z, \quad (1)$$

where $\mathbf{f} \in \mathbb{C}^{N \times 1}$ and $\mathbf{G} \in \mathbb{C}^{N \times M}$ denote the channel spanning from the RIS to the user and the channel spanning from the BS to the RIS, respectively; $\mathbf{w} \in \mathbb{C}^{M \times 1}$ denotes the beamforming vector at the transmitter BS; s denotes the transmitted normalized symbol; z denotes the additive white gaussian noise (AWGN) introduced at the receiver user.

Interference field at the n -th RIS element:

$$E_n = \quad (2)$$

APPENDIX A

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ACKNOWLEDGMENTS