

Peer Review

Review of: "Enhanced Channel Estimation for Double RIS-Aided MIMO Systems Using Coupled Tensor Decompositions"

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This paper investigates channel estimation in double RIS-aided MIMO systems. Specifically, it proposes efficient algorithms leveraging C-KRAFT and C-ALS to utilize common channel information, achieving more accurate estimates with fewer identifiability constraints than existing methods. However, I have the following concerns:

1. There are some existing studies investigating tensor-based channel estimation for RIS-aided MIMO systems. What are the key differences and challenges in designing the algorithm proposed in this paper compared to existing works, particularly when considering the impact of double-reflection links?
2. The training procedure for components 1–3 requires further explanation. What are the underlying motivations and design principles? For instance, why does one RIS require only two states while the other necessitates beam sweeping?
3. The SINR during information transmission in the studied system relies on the beamforming matrices and three channels: $\mathbf{P}_1$, $\mathbf{P}_2$, and $\mathbf{P}_3$. If possible, it would be beneficial for the authors to demonstrate the actual SINR under imperfect channel estimation, considering different transmission powers and/or varying pilot lengths.

Declarations

Potential competing interests: No potential competing interests to declare.