Qeios

Peer Review

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

Le-Nam Tran[1]

1. University College Dublin, Ireland

This is very solid work on channel estimation for Double RIS-aided MIMO systems. I have the following suggestions:

1. Below (1), it is assumed that the amplitude of each element of RIS 2 is inversely proportional to the square root of M_{S2}. If M_{S2} is very high, then the amplitude is very small, which is difficult to implement. It is quite common to assume that the gain of reflecting elements is unity. I think this is not a practical constraint, but rather to achieve a nice mathematical presentation. If that is the case, the authors may remind readers of this fact, or alternatively revise the presentation.
2. Tensor Signal Modeling, and canonical polyadic (CP) decomposition in particular, is adopted for channel estimation in this paper, but its motivation and benefits are not clearly explained. Are there any alternatives to channel estimation for double RIS-aided systems, rather than CP decomposition? If that is the only method, the authors may emphasize that, which would make the paper stronger.
3. In relation to the previous comment, do the authors leverage special packages/libraries/tools to compute the involved parameters such as those in (29) or (34) efficiently? Please also indicate the platform/programming language used to obtain simulation results. It's great if the authors can also make the simulation code available.

doi.org/10.32388/DXSU6X

Declarations

Potential competing interests: No potential competing interests to declare.