

Large MIMO Channel Estimation Study Based on Independent Component Analysis

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Abstract—MIMO systems, which consist of multiple transmitting and receiving antennas, are used as a method for effective use of frequency bandwidth. In general, signal separation in MIMO requires a known channel matrix. However, using Independent Components Analysis, signal separation is possible even when the channel matrix is unknown. On the other hand, if the channel matrix is known, MIMO technology may be efficiently utilized by precoding in the reverse direction line of TDD. In this study, we examined whether ICA can be used for signal separation and channel information estimation. We report that signal detection and channel estimation in large-scale MIMO can be performed without any problems.

Keyword—Large-scale MIMO, Channel Estimation, Independent Component Analysis, Blind Signal Separation



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