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Abstract

Document Sections

I. Introduction

II. Previous Work

III. Proposed Methodology for Data Reduction and Transmission Over Mimo

IV. Simulation Results

Abstract:

Modern wireless communication system capacity can be enhanced using modulation methods like QPSK/QAM, combination of multiple inputs multiple outputs (MIMO) channel, error correction codes and advanced multiplexing methods like Orthogonal Frequency Division Multiplexing (OFDM). Working on the similar goal, this paper proposed a methodology to enhance end to end performance of the system. The proposed method utilizes the Principal Component Analysis (PCA) for data reduction MIMO channel combination with 4-PSK modulation having Low Density Parity Check (LDPC) error correction. The BER and RMSE is calculated for both the schemes and the performance of the system is evaluated with the different configuration of the 2x2,3x3,4x4 MIMO channel with and without LDPC. This paper demonstrated the sensor data reduction with PCA to transmit the extracted features of the data over MIMO AWGN channel over LDPC correction to regress the data at the receiver end. The performance of the system is studied for Bit Errors Rate over noisy channel and RMSE to confirm the signal regression.

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