ECE4634 Project Proposal

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Overview

For this project, a MIMO-OFDM transceiver system will be implemented and simulated using Matlab, and the system performance will be evaluated using the SCM channel model used in 3GPP.

System Blocks

The system contains the following processing blocks:

- Source encoder: Image compression using SVD
- Channel encoder: Low-density parity check (LDPC) code
- Modulator: MIMO-OFDM spatial multiplexing transmitter
- Channel: SCM channel mode
- Demodulator: MIMO-OFDM MMSE demodulator
- Channel decoder: LDPC decoder
- Source decoder: Image decompression

Expected Results

- BER performance curve for AWGN and SCM channel model
- PSNR performance of the transmitted and received image