

Assignment 5: BER analysis of SIMO system over Rayleigh channel

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Problem 1: Simulate the BER versus SNR curve for single-input multiple output (SIMO) system with maximal ratio combining (MRC) under Rayleigh communication channel. Assume BPSK modulation and plot the BER for $N_R = 1, 2, 3$ receive antennas and write down your observations with proper reasoning.

Problem 2: Simulate the BER versus SNR curve for SIMO system with equal gain combining and selection combining under Rayleigh communication channel and compare its performance with MRC. Assume BPSK modulation and plot the BER for $N_R = 2$ receive antennas and write down your observations with proper reasoning.

Note: Vary the SNR from -5 dB to 30 dB in steps of 4 dB. Transmit at least 10^4 bits.