tags: `CommIC`

CommIC HW1 report

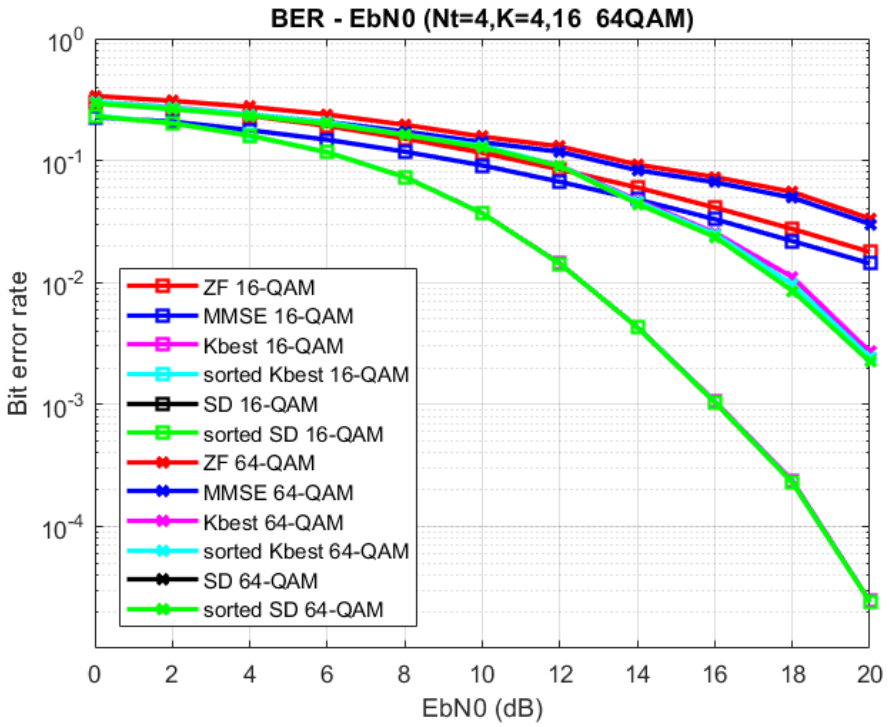
Programming related settings

- Programming Language: MATLAB
- Compiling environment: MATLAB R2019a - academic

Simulation settings

- 4x4 MIMO system
- Rayleigh fading channel
- AWGN noise
- 16-QAM & 64-QAM modulation
- Minimum simulation BER: 10^{-5} in 16-QAM, 10^{-3} in 64-QAM
- Minimum error bits collection per simulation: 30

Simulation curves



Observation

- BER error rate: ZF > MMSE > Kbest > sorted-Kbest > SD = sorted-SD

File description

- top.m: Run “simulate.m” & “plor_ber.m”.
- simulate.m: Run simulation codes and store BER results to “data/”.
- Simulator.m: A class for generate specify communication systems, include channels, noise, modulation, and record bit errors.
- Detector.m: A class contain various MIMO detection algorithms.
- plor_ber.m: plot the ber curves.
- data/*: Storing all data with BER results