EE5802: DSP Lab

Assignment 6

Problem:

Bit error rate(BER) performance evaluation of OFDM with BPSK and QPSK in wireless multipath channel.

Technical details:

- Use the system model as

  $\underline{y} = \underline{h} \circledast \underline{x} + \underline{n} \quad where\ h_i \sim CN(0,1/L),\ \ n_i \sim CN(0, N_0)$

  $\underline{x} = OFDM\ Tx\ vector$

  $\underline{y} = OFDM\ Rx\ vector$

  $\underline{h} = channel\ vector\ of\ length/tap\ L$

  $L = 5$
- For each E_b/N_0,
  - Number of iterations = 1000
  - IFFT/FFT size = 2048
  - Length of CP = 144
- Take E_b/N_0 = 0:5:30 dB
- Use matlab FFT function.
- All other technical and submission details are same as assignment 4.
- Reference value of BER at SNR = 5dB is BER = 0.064