Function calls to develop working understanding

%differences between 16 and 64 @ sigma 0.1

[error16, error16ofdm] = qam\_OFDM\_fadechannel\_func(16,16,4,0.1);

[error64, error64ofdm] = qam\_OFDM\_fadechannel\_func(16,64,16,0.1);

%differences between different values of sigma at 64 SC

sumError = 0;

tic

for n=1:1000

for i=1:10

[error(i,:,n), errorOfdm(i,:,n)] = qam\_OFDM\_fadechannel\_func(16,64, 0, 0.1\*i);

[~, errorOfdm16(i,:,n)] = qam\_OFDM\_fadechannel\_func(16,16, 0, 0.1\*i);

end

end

toc

x1 = [0.1:0.1:1];

x2 = [0.1 0.2 0.3];

avgerror = sum(error,3);

avgerrorOfdm = sum(errorOfdm,3);

avgerrorOfdm16 = sum(errorOfdm16,3);

avgError = avgerror(:,1)/1000;

avgErrorOfdm = avgerrorOfdm(:,1)/1000;

avgErrorOfdm16 = avgerrorOfdm16(:,1)/1000;

scatter(x1,avgError)

hold on

scatter(x1, avgErrorOfdm)

legend('Avergae BER without OFDM','Average BER with OFDM','Location','southeast')

legend("boxoff")

hold off

figure

scatter(x2, avgError(1:3))

hold on

scatter(x2, avgErrorOfdm(1:3))

% [error1, error1ofdm] = qam\_OFDM\_fadechannel\_func(16,64,16,0.1);

% [error2, error2ofdm] = qam\_OFDM\_fadechannel\_func(16,64,16,0.2);

% [error3, error3ofdm] = qam\_OFDM\_fadechannel\_func(16,64,16,0.3);

% [error4, error4ofdm] = qam\_OFDM\_fadechannel\_func(16,64,16,0.4);

% [error5, error5ofdm] = qam\_OFDM\_fadechannel\_func(16,64,16,0.5);

% [error6, error6ofdm] = qam\_OFDM\_fadechannel\_func(16,64,16,0.6);

% [error7, error7ofdm] = qam\_OFDM\_fadechannel\_func(16,64,16,0.7);

% [error8, error8ofdm] = qam\_OFDM\_fadechannel\_func(16,64,16,0.8);

% [error9, error9ofdm] = qam\_OFDM\_fadechannel\_func(16,64,16,0.9);

% [error10, error10ofdm] = qam\_OFDM\_fadechannel\_func(16,64,16,1);

x = [0:0.05:1];