
```
%BER Simulation of BASK modulation
clc;
close all;
clear all;

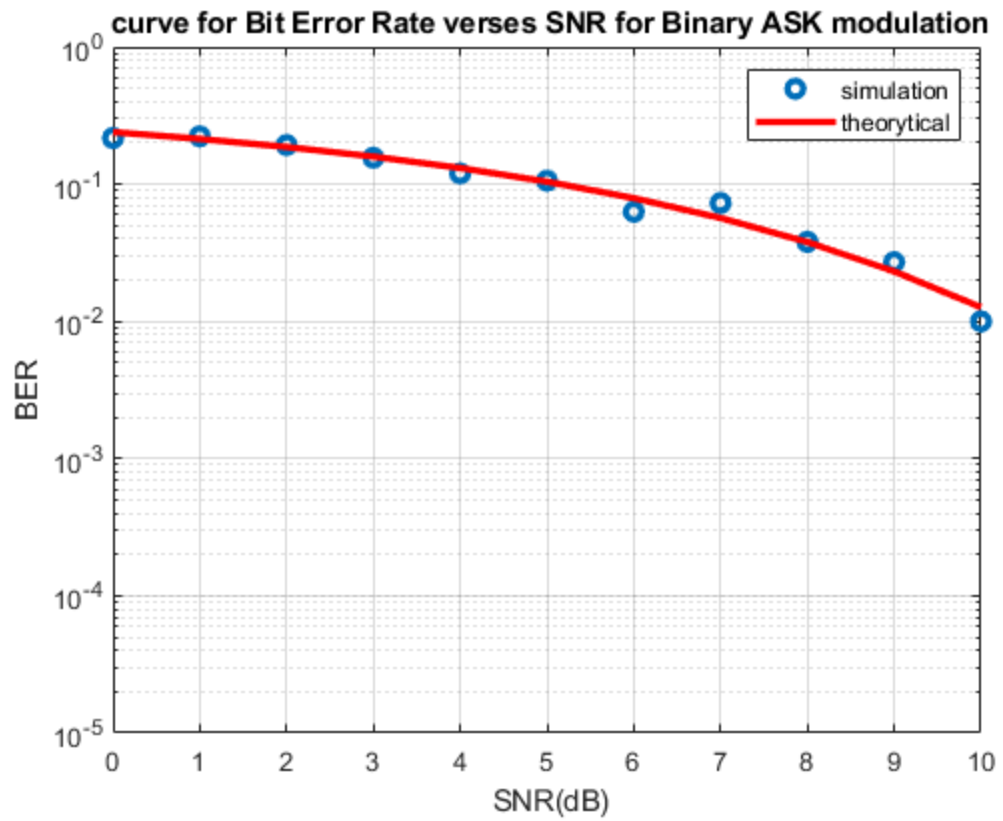
num_bit=1000; %number of bit
data=double(randi(2,[1,num_bit])>1.5);%random bit generation (1 or 0)

SNRdB=0:10; % SNR in dB
SNR=10.^(SNRdB/10);

for(k=1:length(SNRdB)) %BER (error/bit) calculation for different SNR%
    y=awgn(complex(data),SNRdB(k));
    error=0;
    R=0;
    M=[];
    for(c=1:1:num_bit)
        if (y(c)>.5&&data(c)==0)|| (y(c)<.5&&data(c)==1)%logic according
to BASK
            error=error+1;
            M=[M ~data(c)];
        else
            M=[M data(c)];
        end
    end
    error=error/num_bit; %Calculate error/bit
    m(k)=error;
end

semilogy(SNRdB,m,'o','linewidth',2.5),grid on,hold on; %semilog plot?
BER_th=(1/2)*erfc(.5*sqrt(SNR));

semilogy(SNRdB,BER_th,'r','linewidth',2.5),grid on,hold on;
title(' curve for Bit Error Rate verses SNR for Binary ASK
modulation');
xlabel(' SNR(dB)');
ylabel('BER');
legend('simulation','theorytical')
axis([0 10 10^-5 1]);
```



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