

Contents

- [Code](#)
- [Plotting](#)

```
clc;  
clear;  
close all;
```

Code

```
EbN0dB = 0:2:12; % SNR in dB  
EbN0 = 10.^(EbN0dB/10); % SNR in linear scale  
SNR = EbN0; % SNR is same as Eb/N0 for BPSK modulation using Q-function  
BER = 0.5*erfc(sqrt(SNR)); % Theoretical BER for BPSK  
% Also use approximate equation of BER which is BER = exp(-SNR./2)
```

Plotting

```
semilogy(EbN0dB, BER, 'b-o');  
grid on;  
xlabel('Eb/N0 (dB)');  
ylabel('Bit Error Rate (BER)');  
title('Bit Error Rate (BER) for BPSK Modulation');
```



