JSPM

JSPM's

JAYAWANTRAO SAWANT COLLEGE OF ENGINEERING Sr. No. 58, Handewadi Road, Hadapsar, Pune, Maharashtra 411028 Department of Electronics and Telecommunication Engineering



Code:

```
pkg load symbolic;
clc;
clear all;
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clear all;
N=1000000;
L=4;
for SNRdb=[0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60];
 SNR=10.^(SNRdb/10);
 display(SNR);
  p=(SNR/(2+SNR)).^0.5;
  display(p);
 q=((1-p)/2).^L;
  %r=((1+p)/2);
 for index=0:1:L-1;
  n=L+index-1;
  display(n);
  k=index;
  display(index);
  n_factorial=factorial(n);
  k_factorial=factorial(k);
  display(k_factorial);
  n_minus_k_factorial=factorial(n-k);
  combi=n_factorial/(k_factorial.* n_minus_k_factorial);
  syms index
  f = combi.*(((1+p)/2).^index);
  V = subs(f, k, 0:3)
  BER = sum(V)
  display(BER);
  %syms index;
  %BER = symsum((combi.*(r.^index)),index,0,3);
  BERdb=10.*log10(BER);
   BERdb_perbit=BERdb/N;
   display(BERdb_perbit);
  %plot(SNRdb,BER,'r');
```



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end
ezplot(BERdb_perbit,[0,60]);
hold on;

end xlabel('SNR in Decibel'); ylabel('BER in Decibel per bit'); grid on;

Output:

