

Final Project

Project assigned on Mar 25

Project report due on Apr 20, 6:00 pm

1 Problem

Write a program to calculate the mutual information of M -PAM over an AWGN channel as a function of Signal-to-Noise Ratio (SNR). Develop a plot showing the following items as a function of SNR:

1. Capacity (3 Marks).
2. Mutual information of M -PAM for $M=2,4,8,16,32,64$ (12 Marks).
3. Points at which a bit-error-rate of 10^{-6} is achieved by uncoded M -PAM (3 Marks).
4. Possible coding and shaping gains over uncoded PAM (2 Marks).

2 Submission

You will need to submit a report (1 page; 2 sides) that includes your plot and explanations. Email any programs that you may have to write.

3 Marks

I will grade your report/program and assign marks suitably.