**KFUPM**-EE DEPT.

EE573- Digital Communications II

**Dr. Ali Muqaibel**

Assignment # 1 Due:

Review of Digital Communications Fundamentals

Performance analysis of 4-ary PAM under White Laplacian noise

Consider a signal detector with input

where occurs with equal probability and the noise variable *n* is characterized the (Laplacinan) PDF shown in the figure.

*n*

* Determine the probability of error as a function of the SNR.
* Perform Monte Carlo Simulation to get the BER vs. SNR.
* Plot the simulation results on top of the theoretically derived results.
* Compare the impact of Laplacian noise with the impact of Gaussian noise on the BER performance.
* Comment on the results

Every group should submit an MS-word typed solutions+ 5 min presentation to discuss your results.

Dr. Ali Muqaibel