Name(s)	Project Number
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Project Title

Techniques for Signal Estimation

Abstract

Objectives/Goals
The point of my project is to find the most efficient techniques for fixed versus adaptive filtering of signals. The error in mean and variance of each technique assesses the overall performance of it. The need for adaptive filtering comes with a changing signal while fixed filtering applies for slowly changing signals. The goal is to find the best technique for estimating different classes of signals.

Methods/Materials
Each technique is computer simulated using MATLAB.

Results
The Mean and variance of the errors for each technqiue is generated for different classes of signals.

Conclusions/Discussion
The Leaky Least Mean Square (LMS) stabilizes the estimate and reduces the variance when compared to the standard Least Mean Squared technique. Overall, the Leaky integrator with the non-leaksy start is best for fixed filtering while the Leaky LMS is best for adaptive filtering.

Summary Statement

This project is about selecting the best technique for signal estimation.

Help Received

Father helped teach me how to use the MATLAB software.