CSE 706 SEM: Project

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1 Project Goals

The goal of this project is to use the Fast Fourier Transform to understand more about the system error in multigrid methods. The projection onto the eigenbasis for the laplacian will be calculated with the Fast Fourier Transform. The projection can be used to study multiple phenomena related to multigrid methods. The error will be first projected to show smoother decreasing coefficients of high frequencies. Next, the error will be projected onto coarse space to show that it captures modes with appreciable coefficients. Finally, the corrected solution will be projected to show that mostly high modes are left. A projected error monitor will be created to observe the results of these tasks.