

EE 115 Lab 1: Matlab and Communication

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1 Abstract

This lab teaches basic MATLAB and Simulink functions as well as introducing filter design within MATLAB. First, a walk through of basic MATLAB functions are introduced to help acquaint users with the program. Then a Fourier Synthesizer is created with a Simulink model. This model is then further used to help design a Butterworth Filter also within Simulink.

2 Procedure and Analysis

2.1 Simulink Walkthrough

The first part of the lab walks through creating a Simulink model. Simulink is loaded by typing in the command `simulink` into the MATLAB prompt. A Signal Generator and a Scope are attached to each other. The parameters are then edited to have a max. step size of 0.01. The simulation is then ran several times with different parameters to observe its effect on the model. Finally, with a 1 Hz sine wave, the scope's sampling time is varied between 0 and 0.1. The simulation is then rerun and observed.

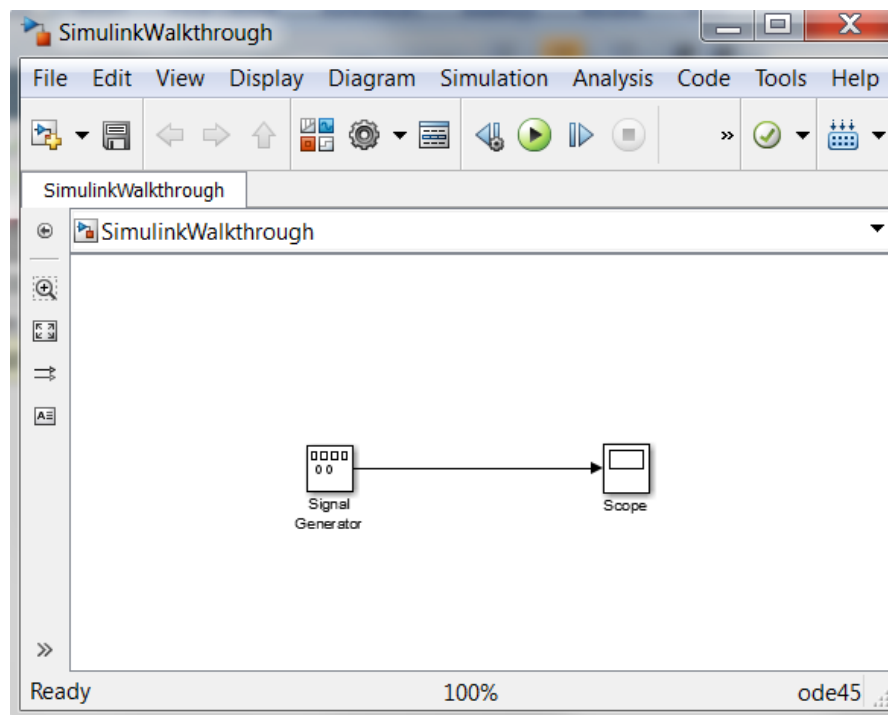


Figure 1: This is a picture of the simulink model.

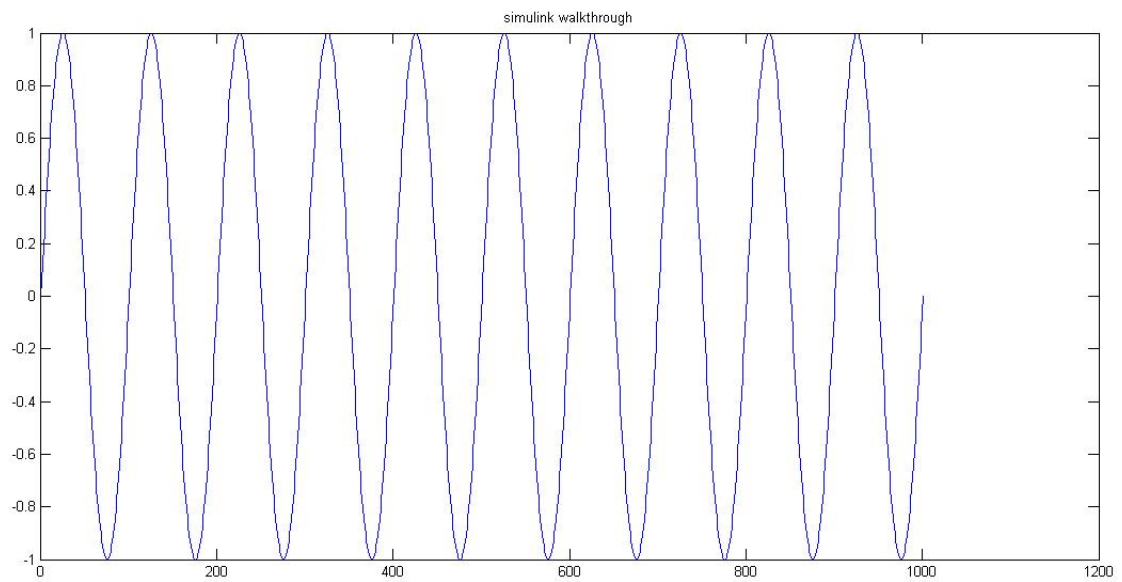


Figure 2: This is a picture of a view from the scope when running through different parameters.

2.2 Fourier Synthesizer

2.3 Filter Design

3 Conclusion