

Problem Set 8 Latex Report

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1 Problem 1

After downloading the trumpet and piano data, with a sampling frequency of 44.1kHz, we take the Fourier transform of the data.

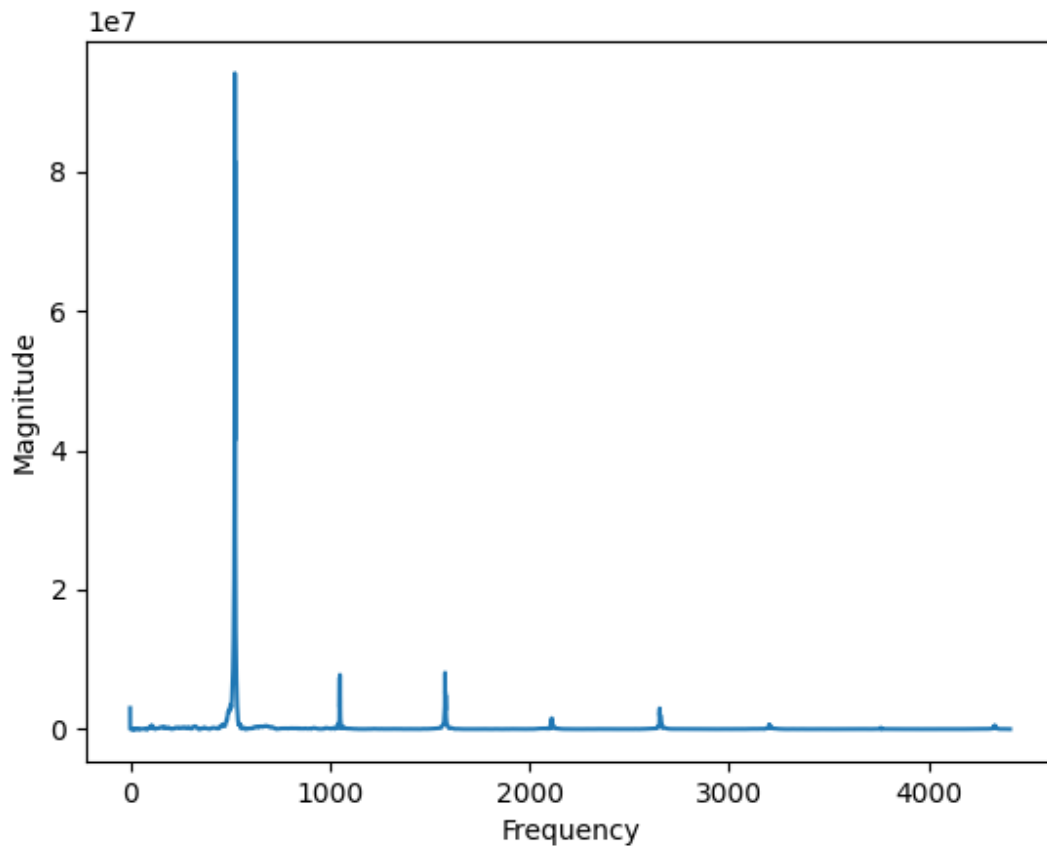


Figure 1: Spectrum for Piano

We can observe in Figure 1 that the piano key has mainly a single frequency component of around 500.

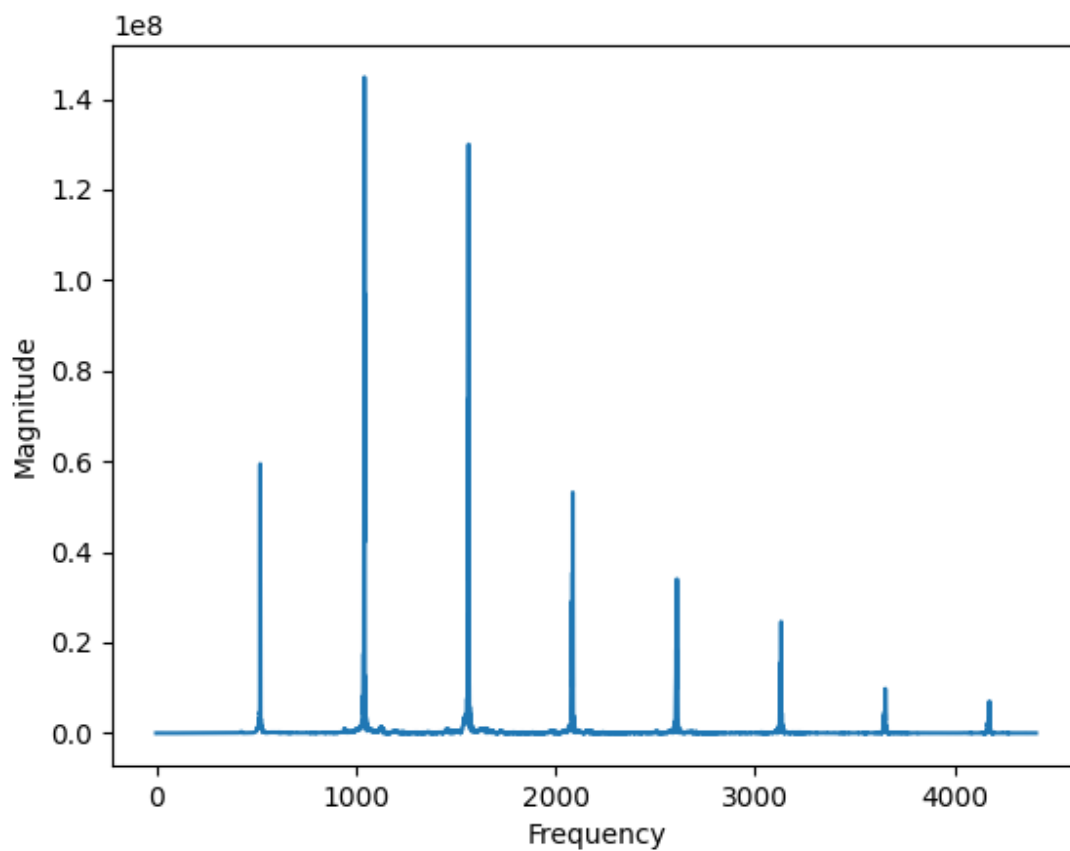


Figure 2: Spectrum for Trumpet

We can observe in Figure 2 that the trumpet has multiple significant frequency components.

2 Problem 2

We solved the Lorenz ivp by iterating from an initial value. Using this, we graphed y - t , and z - x .

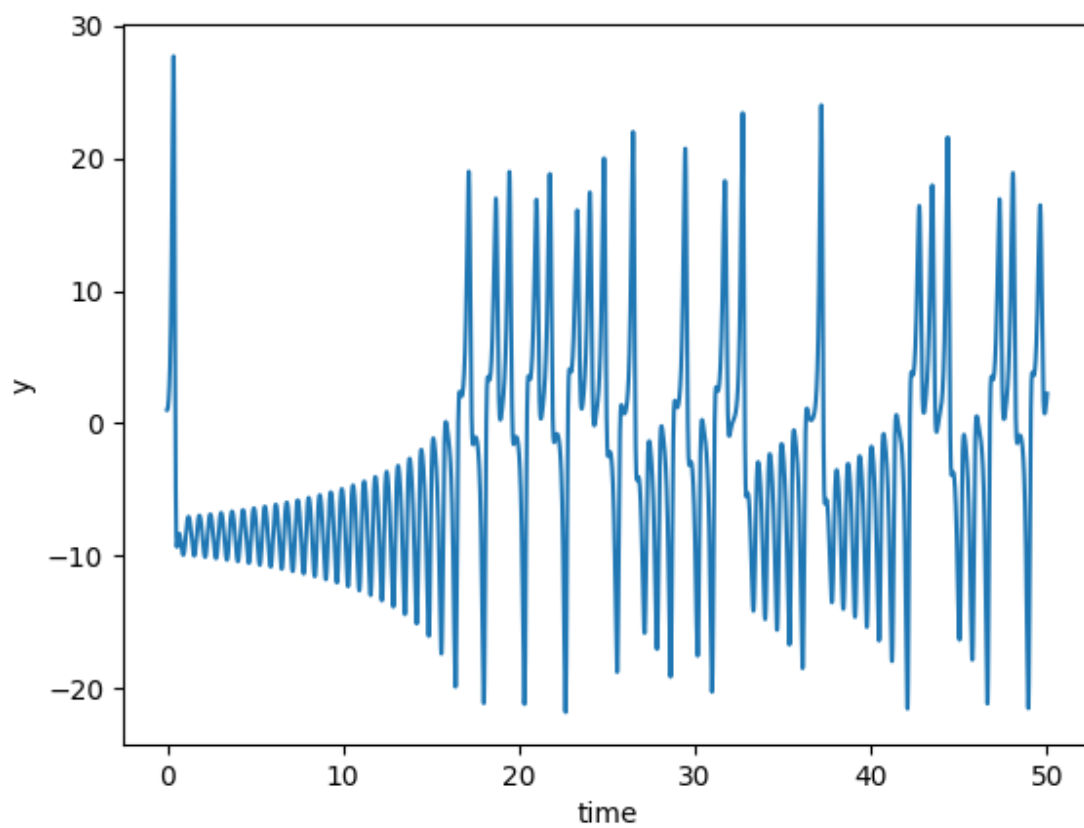


Figure 3: y - t Plot for Lorenz equations

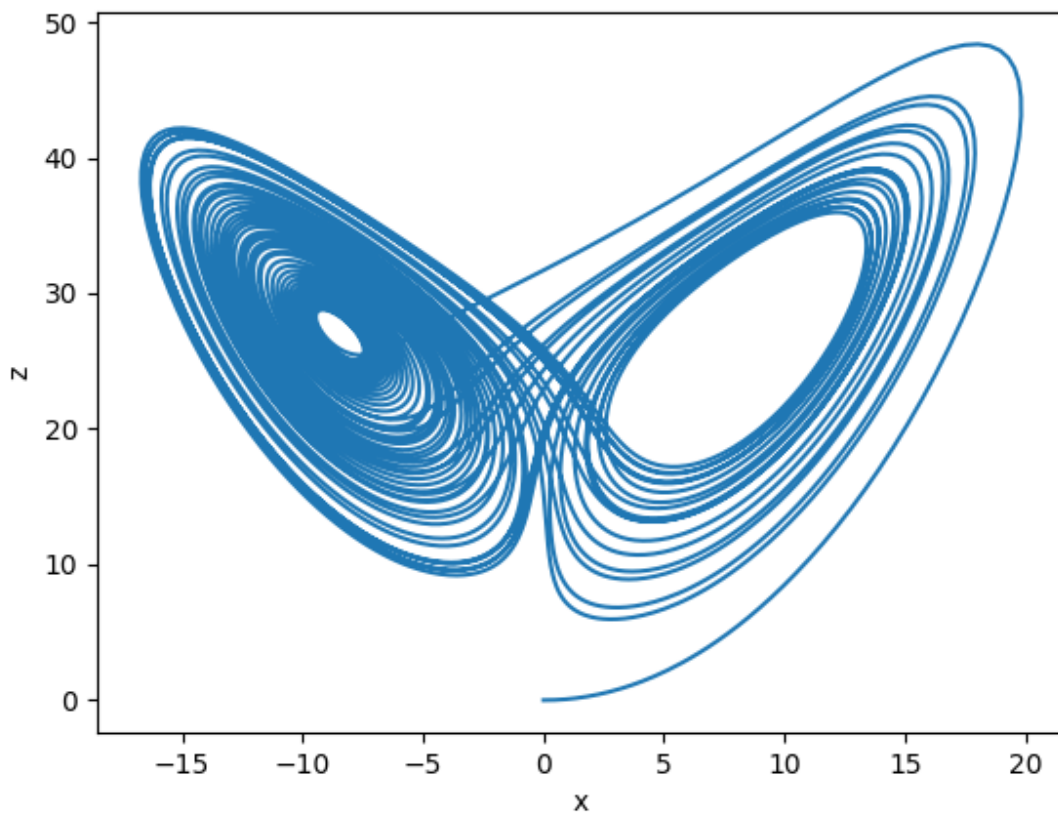


Figure 4: x-z Plot for Lorenz equations