CMPE362

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1 Introduction

- **Q:** Why did I choose this function?
- **A:** The first filter I chose was a functin called "lowpass". The function did not gave me enough parameters to get rid of the unwanted noise. The I used "fir1" for the rest of the project.
- **Q:** Why did I choose these parameters?
- **A:** There are 3 parameters to set: order of the FIR, how many times to apply it and the normalized cutoff frequency. The normalized cutoff frequency was calculated according to documentation of the function. The other parameters used for fine tuning the output.

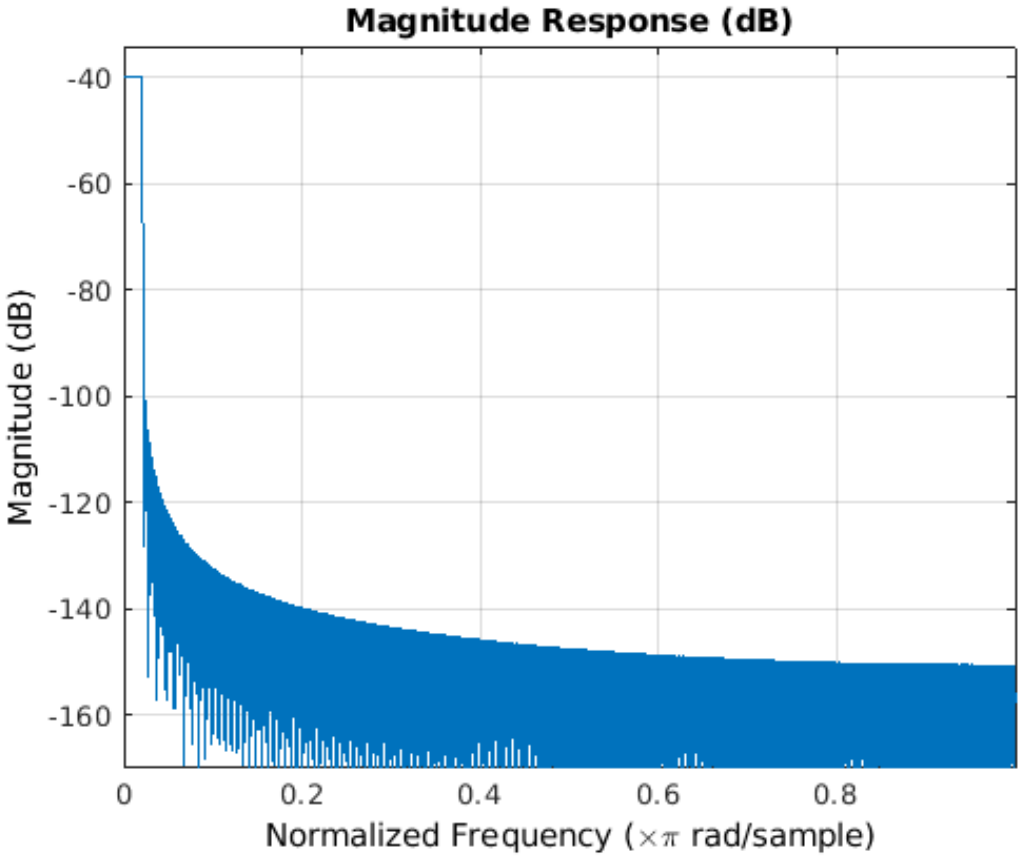

Figure 1: Kick Filter

It is a low pass filter but it passes high frequencies too. The passed high frequencies are mostly erased.

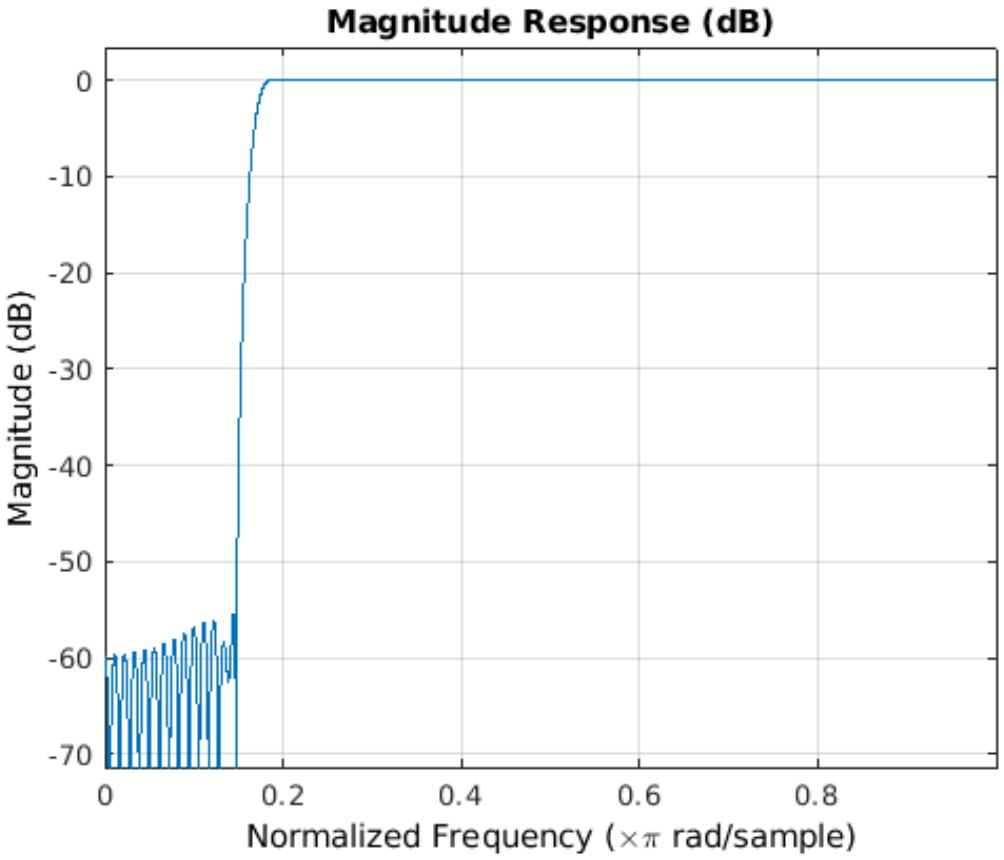

Figure 2: Cymbal Filter

It is a high pass filter. It passes a bit of low frequencies but they mostly got deleted.

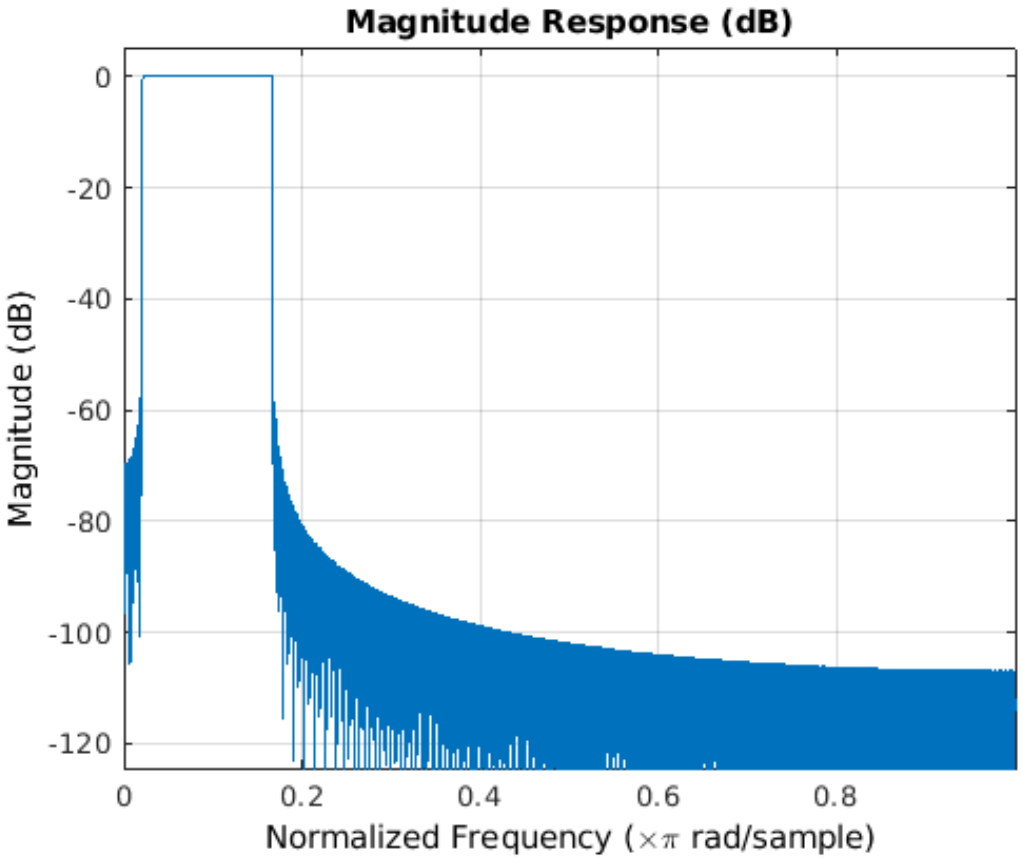

Figure 3: Piano Filter 1

It is a band pass filter. It allows a band of frequencies. the other dfequencies get mostly deleted.

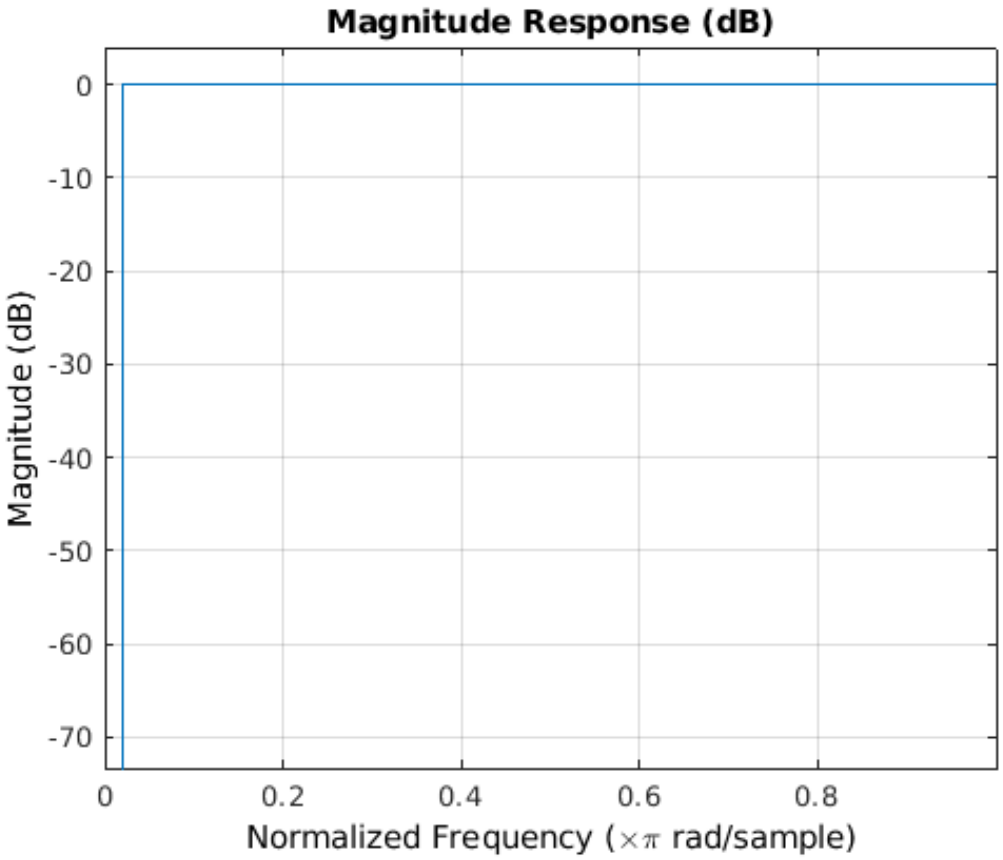

Figure 4: Piano Filter 2

This filter is a high pass filter with a big order. It nearly deletes every low frequency waves.

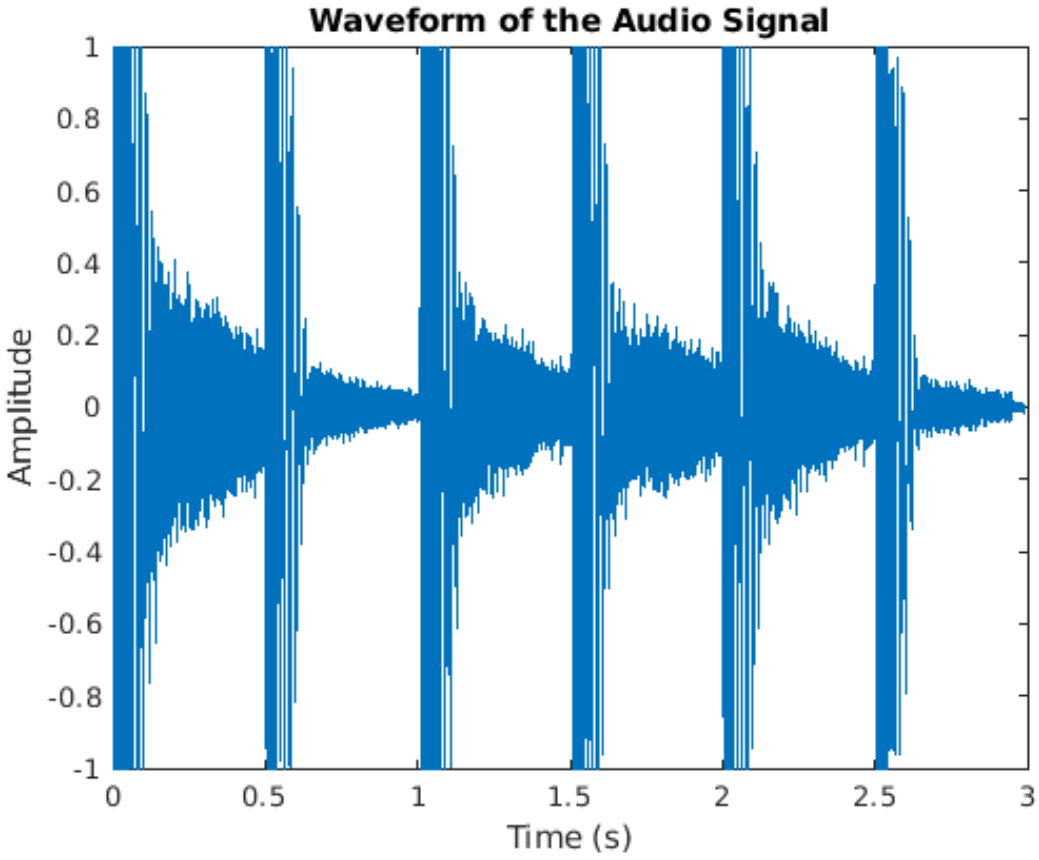

Figure 5: Input Waveform

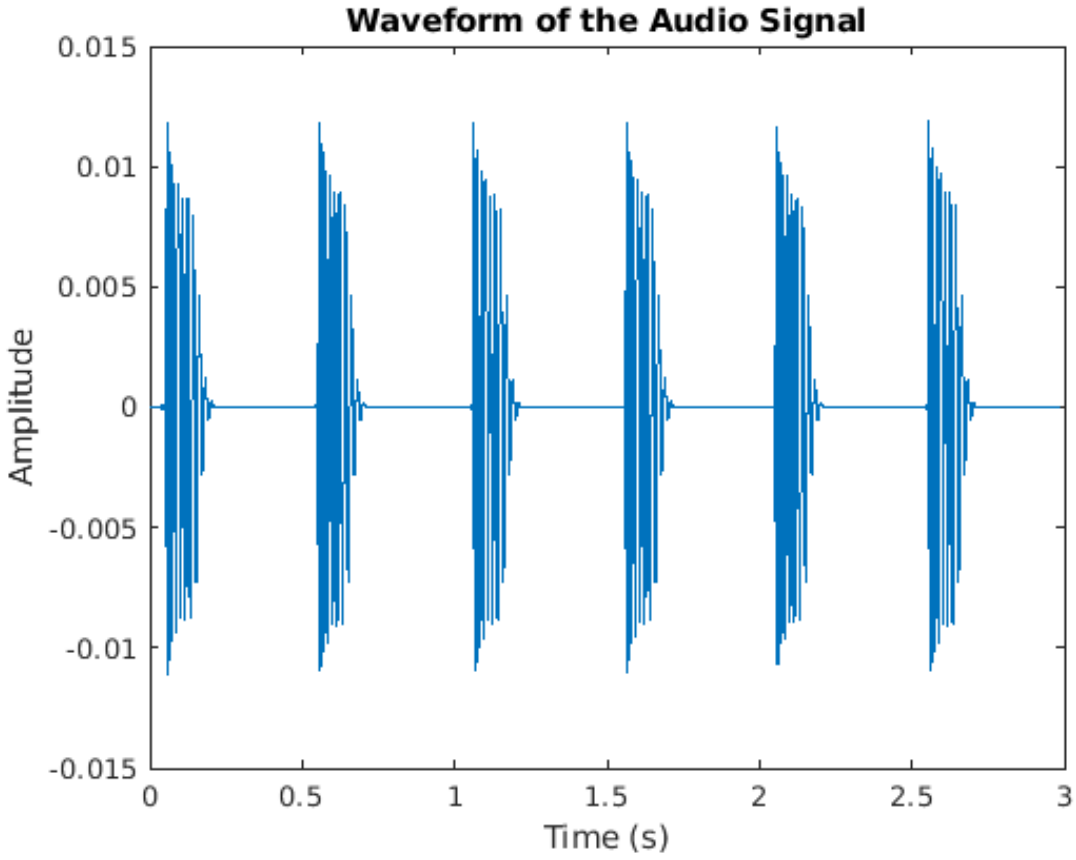

Figure 6: Kick Waveform

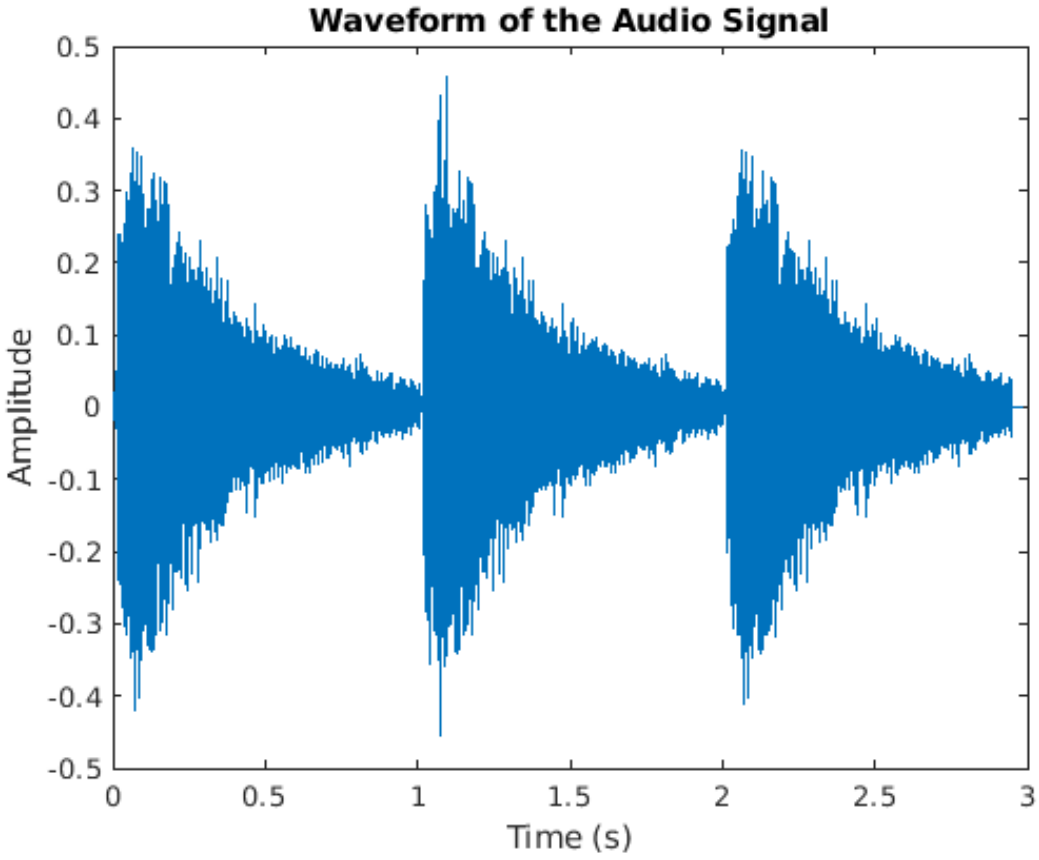

Figure 7: Cymbal Waveform

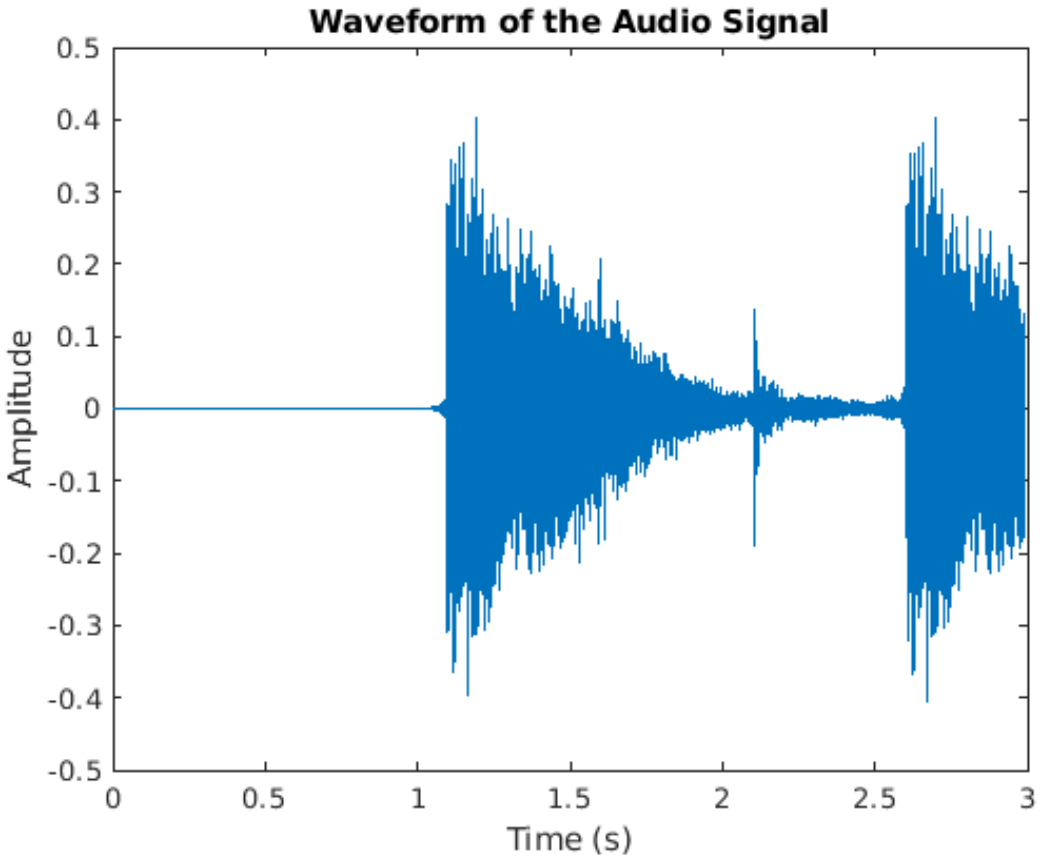

Figure 8: Piano Waveform

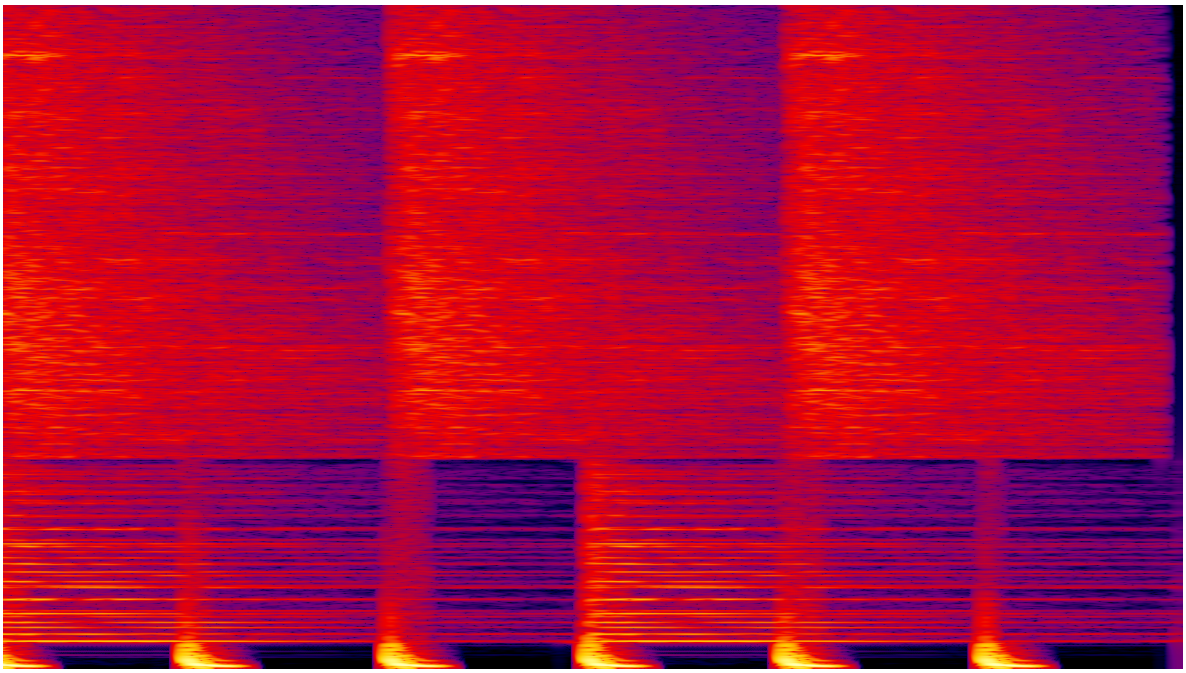

Figure 9: Input Spectogram

Figure 10: Kick Spectogram

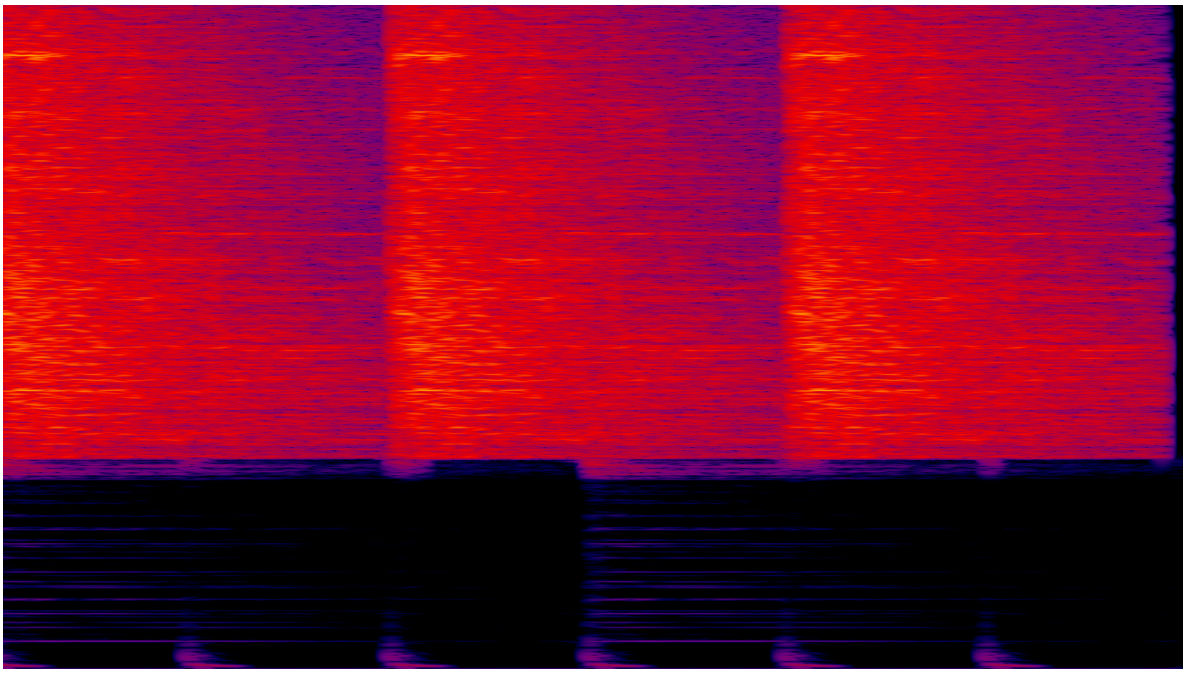

Figure 11: Cymbal Spectogram

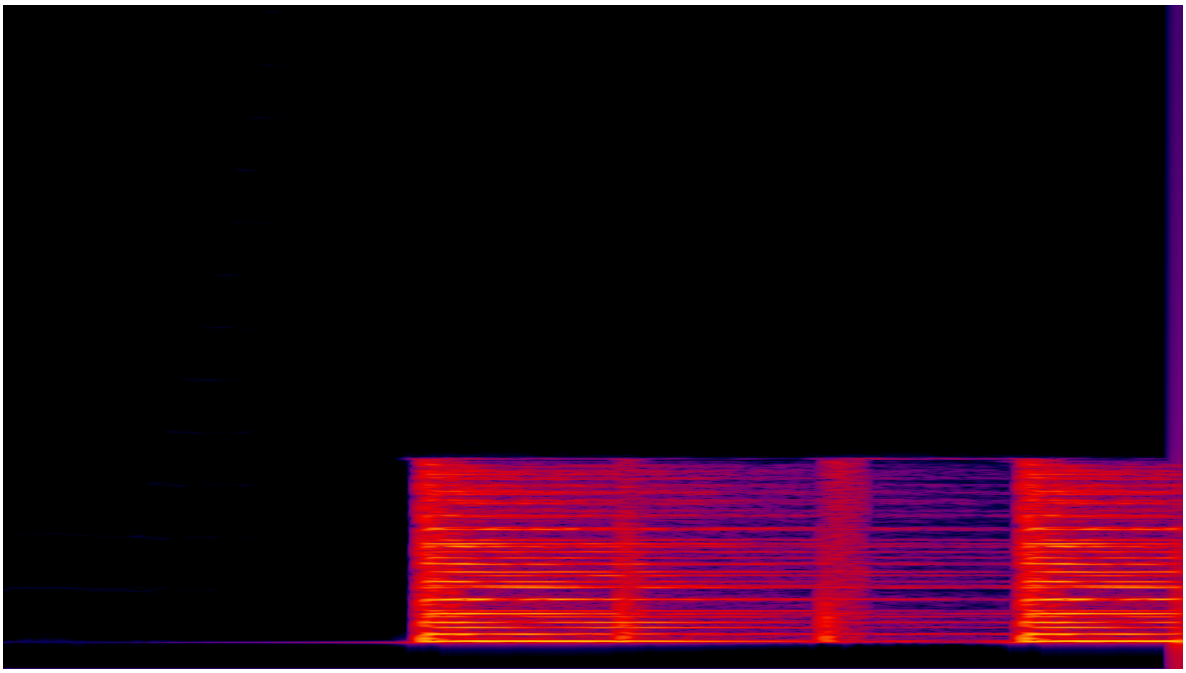

Figure 12: Piano Spectogram