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```
% Record some interesting locations impulse response (local church, your
% bathroom/livingroom, lecture hall, guildroom...) (for
% example with you phone). Or you can use 'LoveLibrary.wav' from this
% folder.
% Import your IR to Matlab and exam it and use it to add
% reveberation to 'Guitar.wav'. Make sure that your IR and 'Guitar.wav' has
% the same sampling frequency by using resample() if neaded to convert your
% IRs samplerate.

% Write down what impulse response you used and how you got it.
```

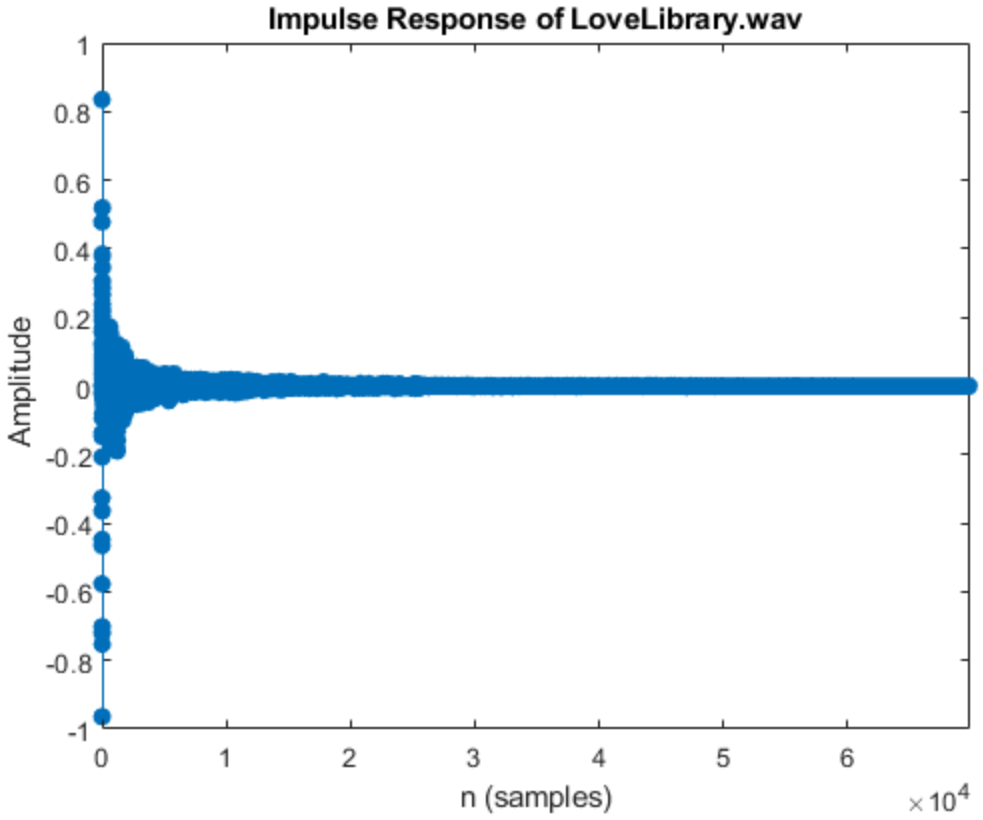
Import audios and match samplerates

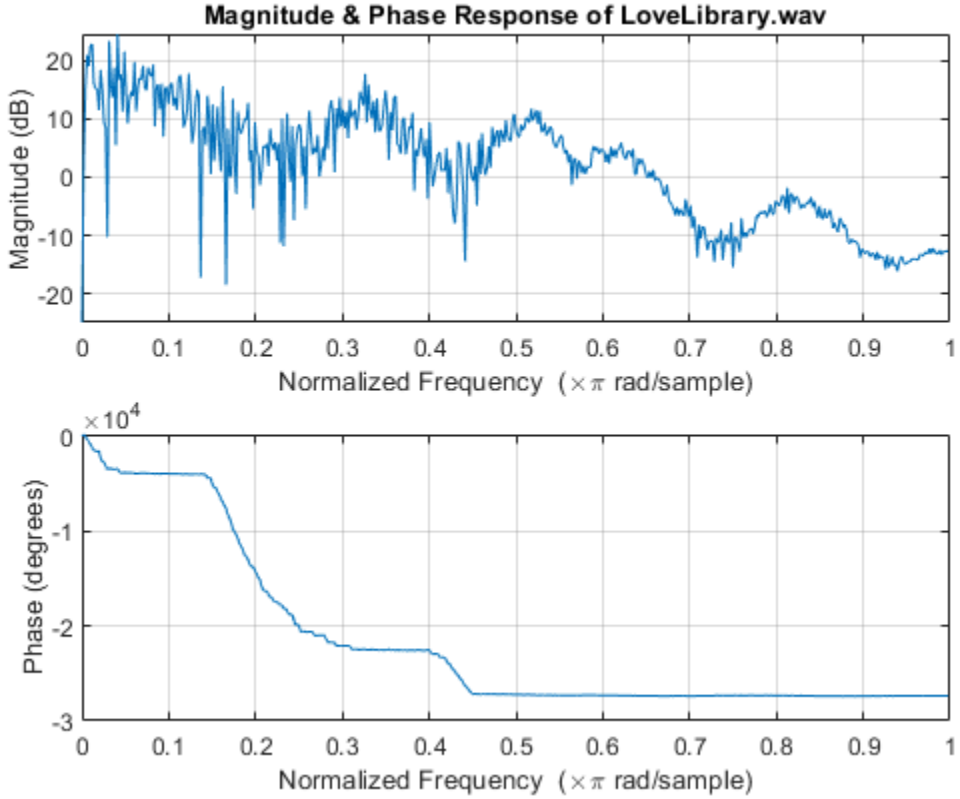
```
[A, A_fs] = audioread('LoveLibrary.wav');
A_info = audioinfo("LoveLibrary.wav");
[B, B_fs] = audioread('Guitar.wav');
B_info = audioinfo("Guitar.wav");

A = resample(A, B_fs, A_fs); % for matching sample rates
A_fs = B_fs;
```

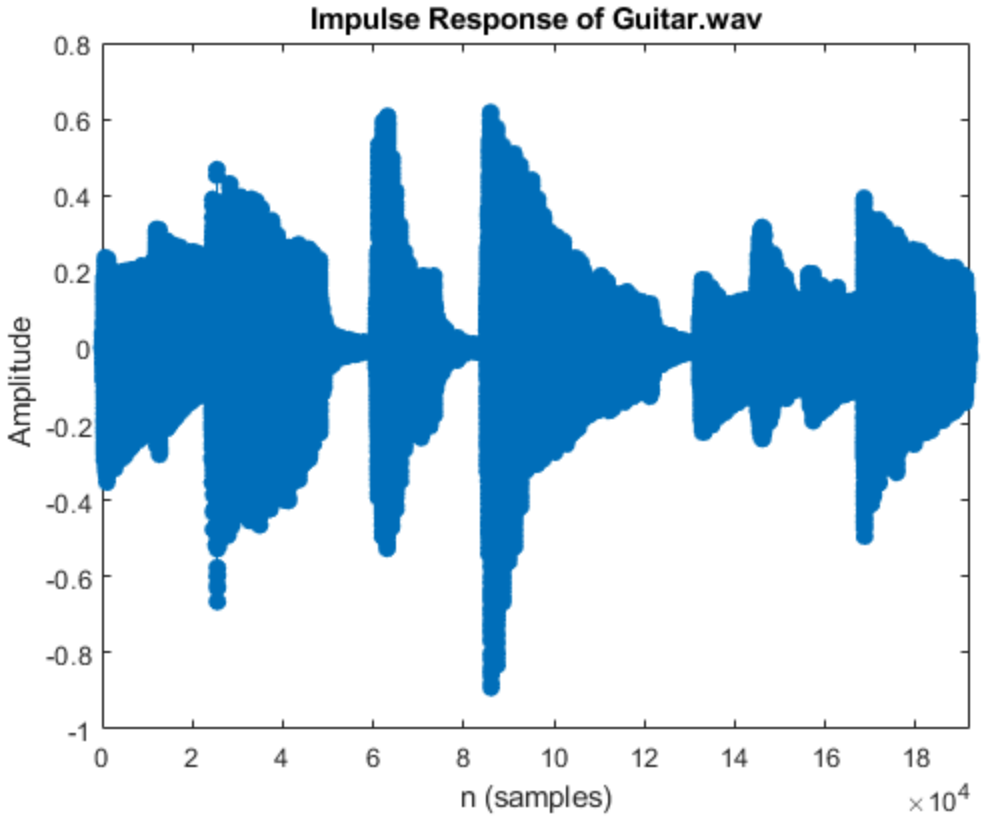
IR Analysis

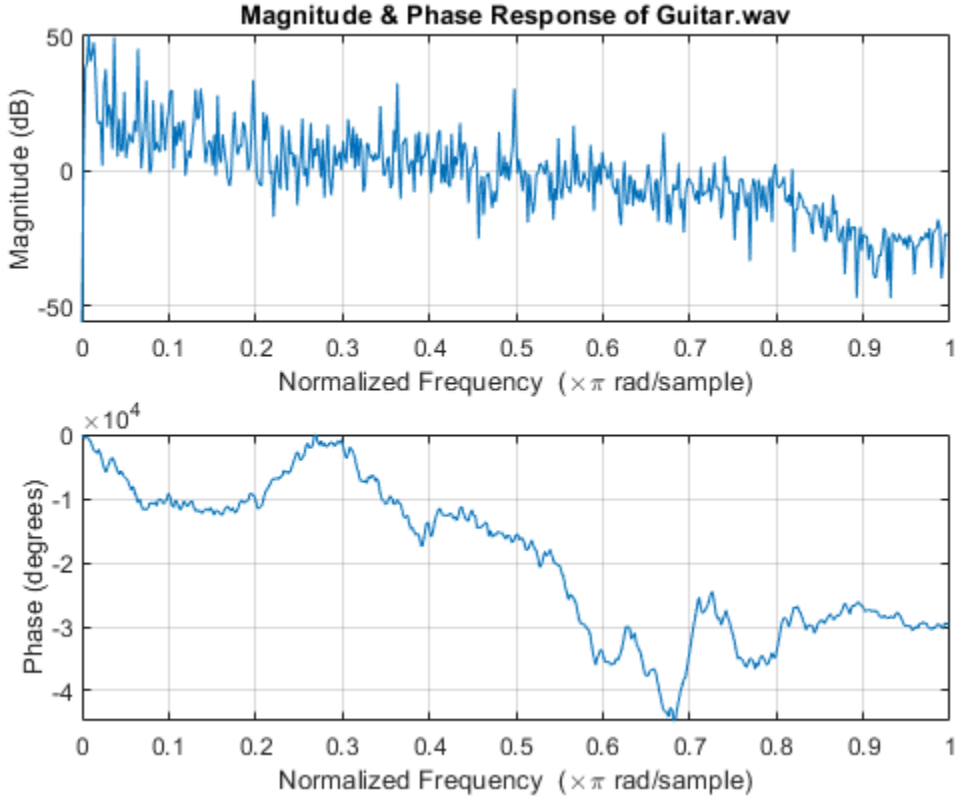
Plot your IR Plot one sided magnitude and phase responses of you IR Analyse spectrums with couple of sentenses. You can smooth the the plot by lowpass filtering the responce

```
figure(1);
impz(A);
title('Impulse Response of LoveLibrary.wav');

figure(2);
freqz(A);
title('Magnitude & Phase Response of LoveLibrary.wav');

figure(3);
impz(B);
title('Impulse Response of Guitar.wav');

figure(4);
freqz(B);
title('Magnitude & Phase Response of Guitar.wav');
```


Impulse Response of LoveLibrary.wav
Amplitude
n (samples)
×10^4


Magnitude & Phase Response of LoveLibrary.wav
Magnitude (dB)
Normalized Frequency (×π rad/sample)
×10^4
Phase (degrees)
Normalized Frequency (×π rad/sample)

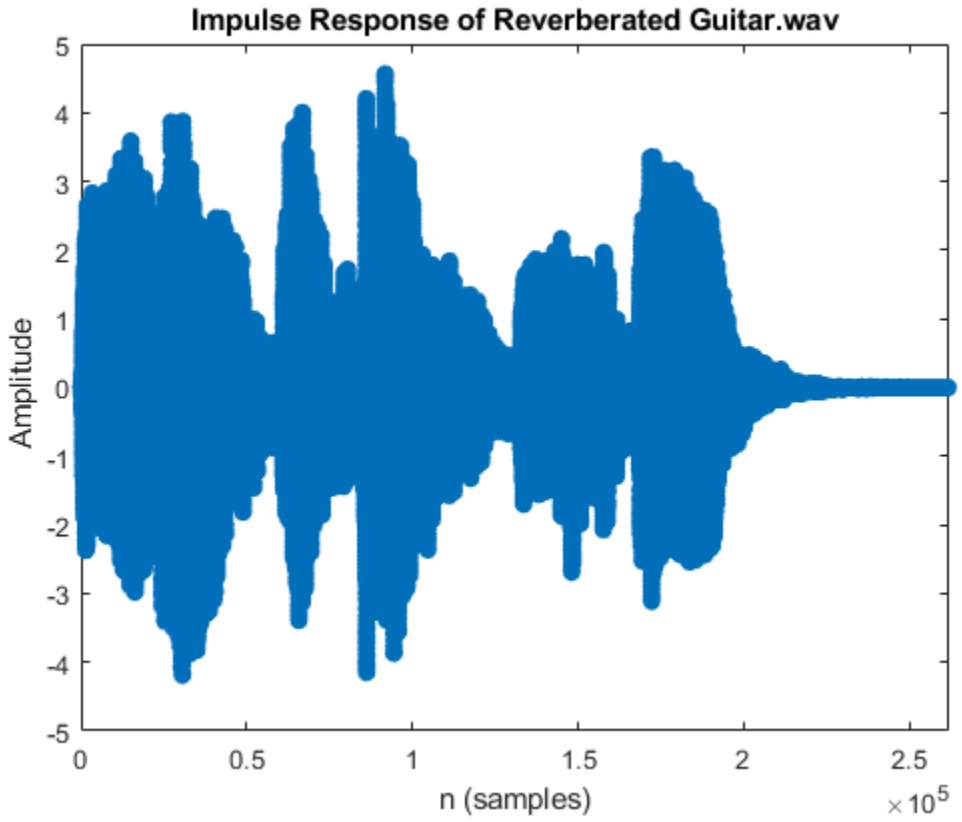

Impulse Response of Guitar.wav
Amplitude
n (samples)
×10^4

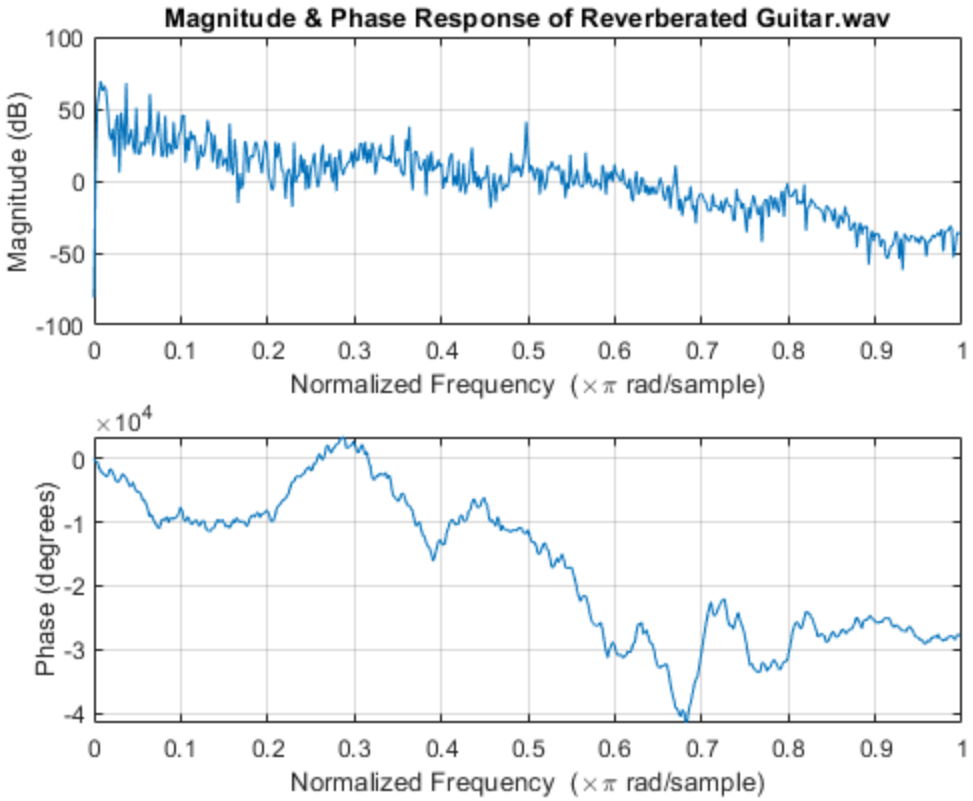

Magnitude & Phase Response of Guitar.wav
Magnitude (dB)
Normalized Frequency (×π rad/sample)
×10^4
Phase (degrees)
Normalized Frequency (×π rad/sample)

Adding Reverb

Add reverberation to Guitar.wav by using convolution

```
soundsc(A, A_fs);
Reverberated = conv(B,A);
soundsc(Reverberated, A_fs)

figure(5);
impz(Reverberated);
title('Impulse Response of Reverberated Guitar.wav');
figure(6);
freqz(Reverberated);
title('Magnitude & Phase Response of Reverberated Guitar.wav');
```





Published with MATLAB® R2021b