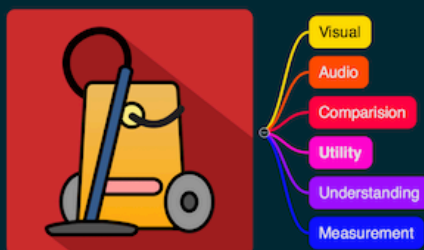


VACUUM - (Yundi_2017.wav, Rosenthal_1930.wav)



VISUAL AUDIO COMPARISON UTILITY [FOR] UNDERSTANDING [AND] MEASUREMENT

A testing and analysis workflow

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Imports

```
Librosa  
IPython  
Numpy  
Scipy  
Matplotlib
```

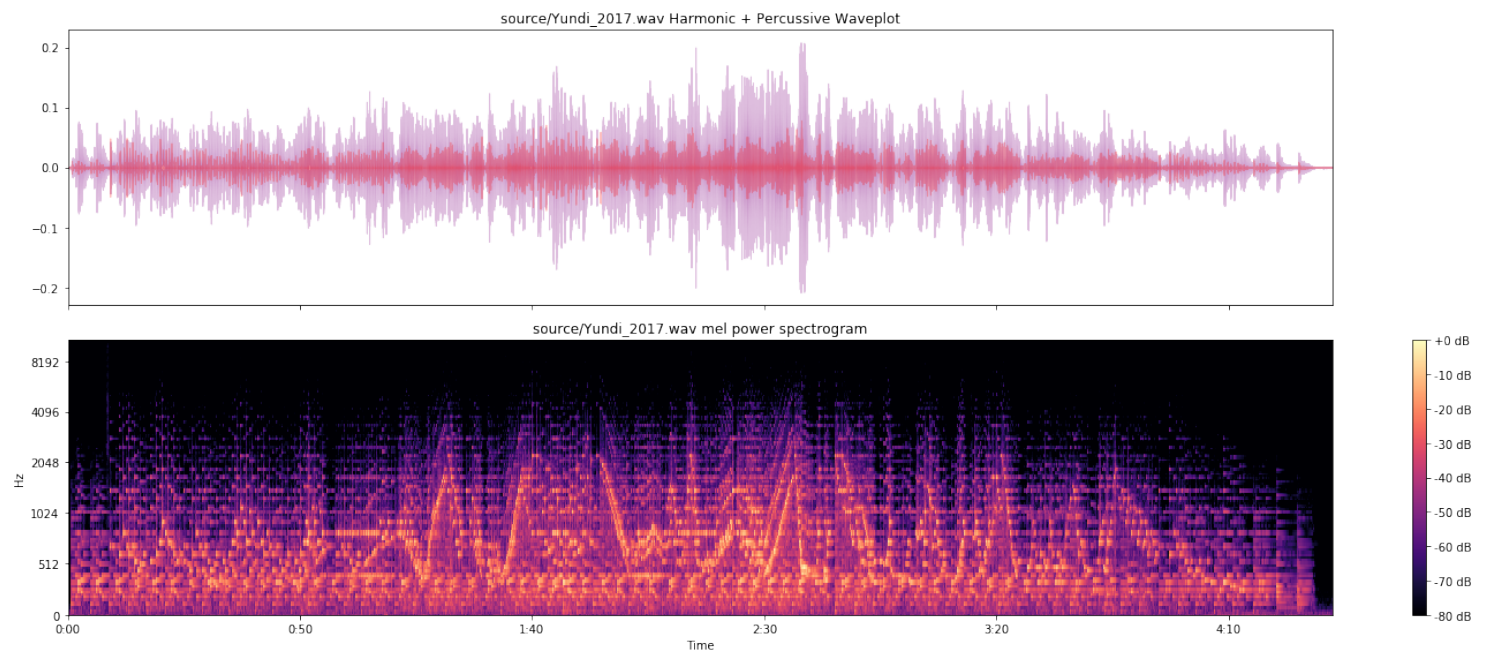
Let's bring the files in

Source1 Track (source/Yundi_2017.wav)

Open Source1, get some basic statistics and create a player

```
File: source/Yundi_2017.wav  
Duration: 272.4534 sec  
Tuning estimate: 0.08999999999999997
```

Let's take a first look at the file

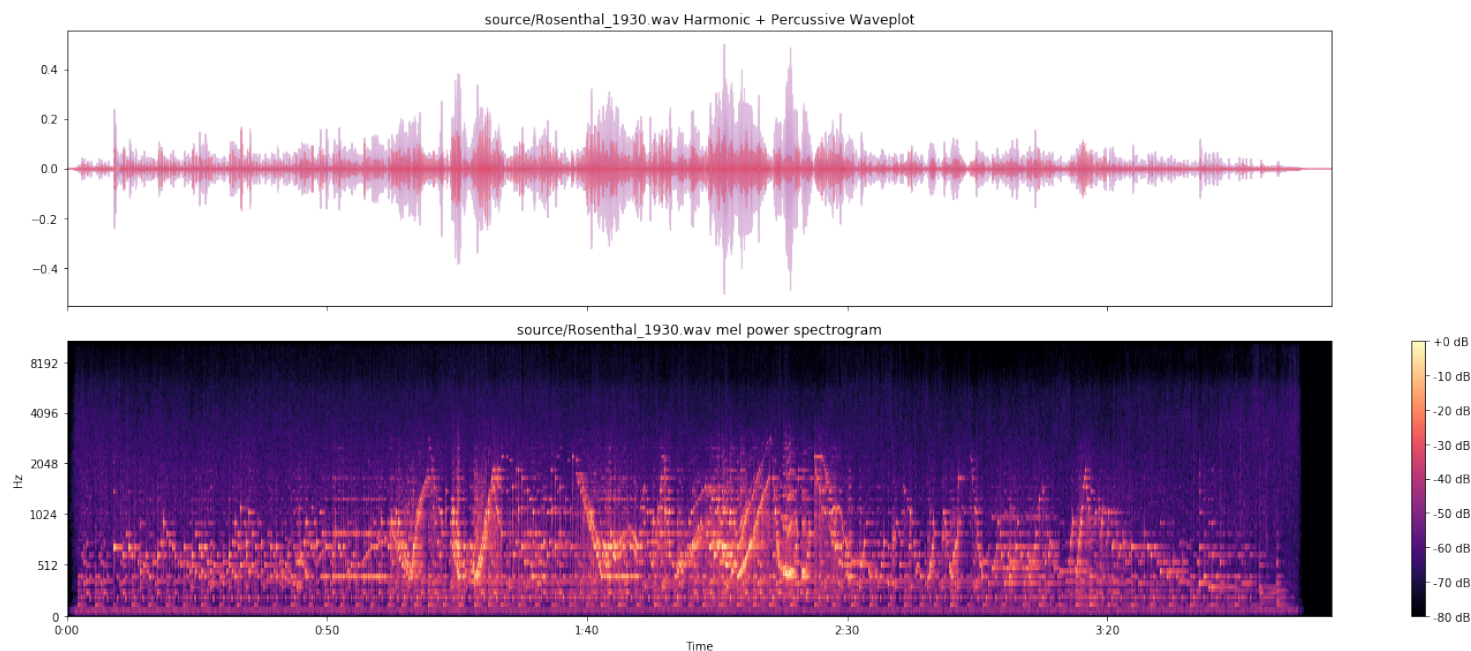


Source 2 Track (source/Rosenthal_1930.wav)

Open Source2, get some basic statistics and create a player

File: source/Rosenthal_1930.wav
Duration: 243.1334 sec
Tuning estimate: 0.19000000000000006

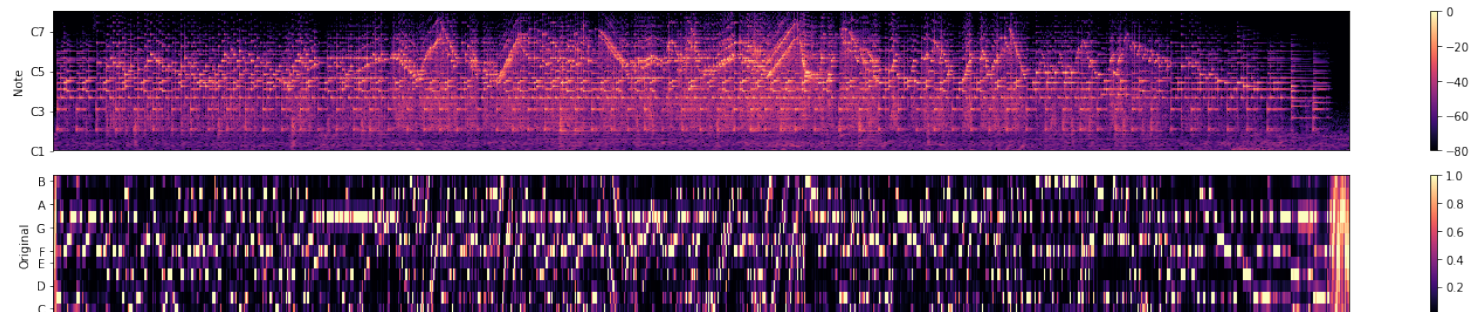
Let's take a first look at the file



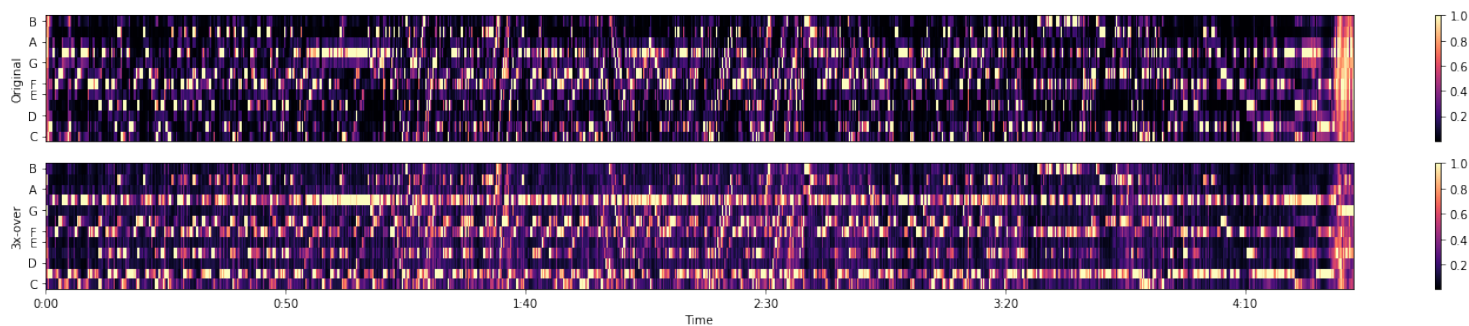
Enhanced chroma and chroma variants (source1)

Enhanced chroma and chroma variants

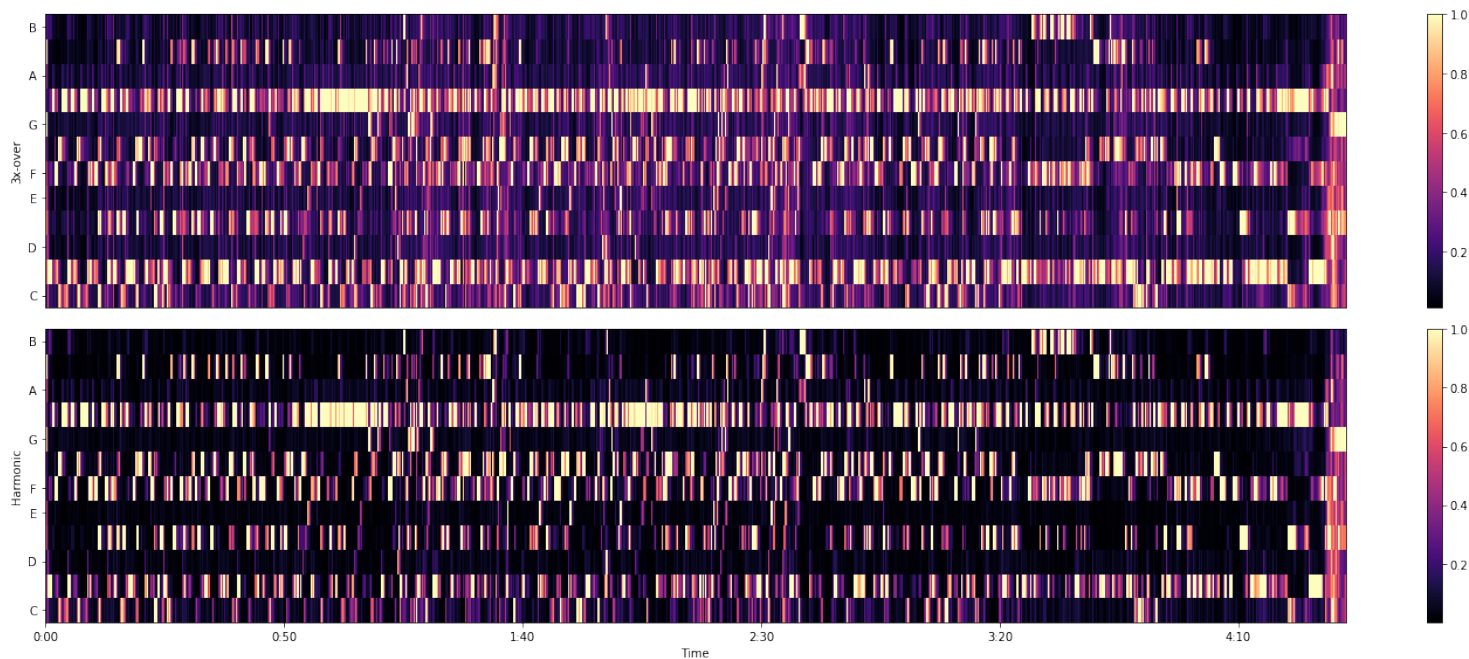
Original source1



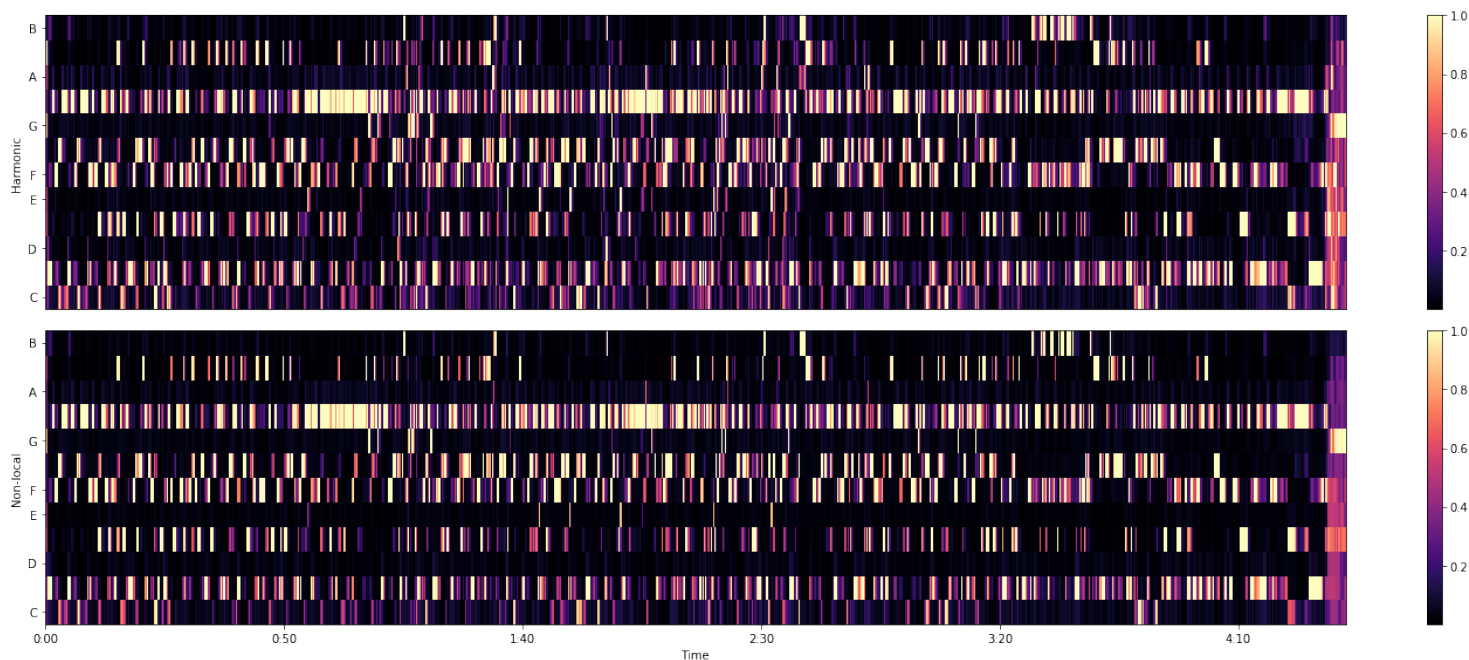
Correct Tuning Deviations



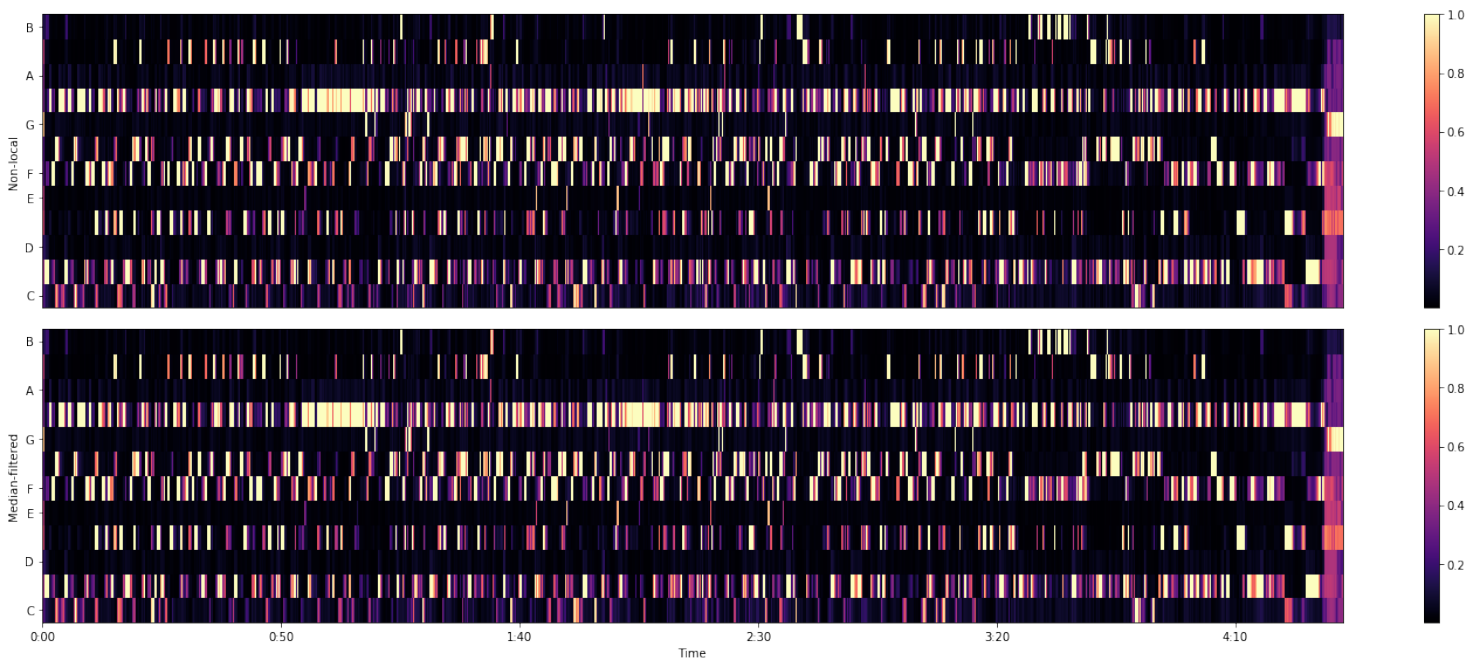
Isolate harmonic component



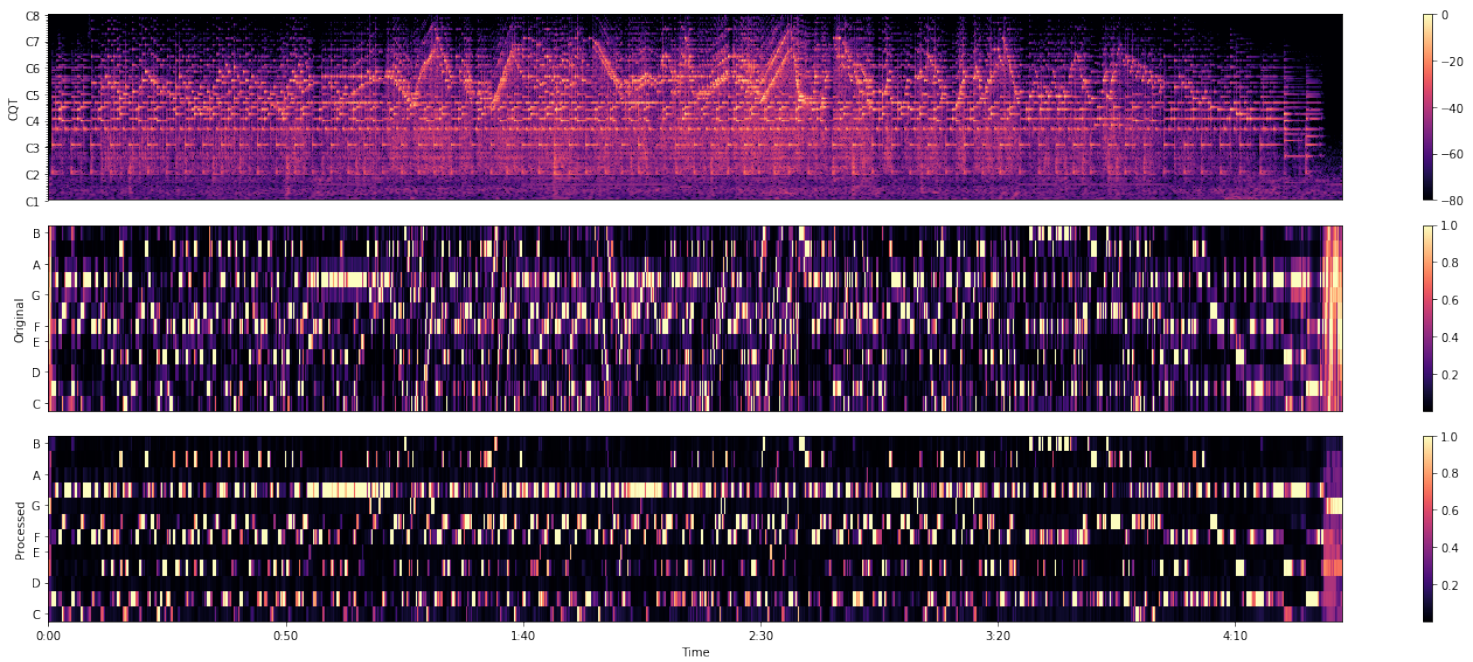
Non-local filtering



Horizontal Median Filter

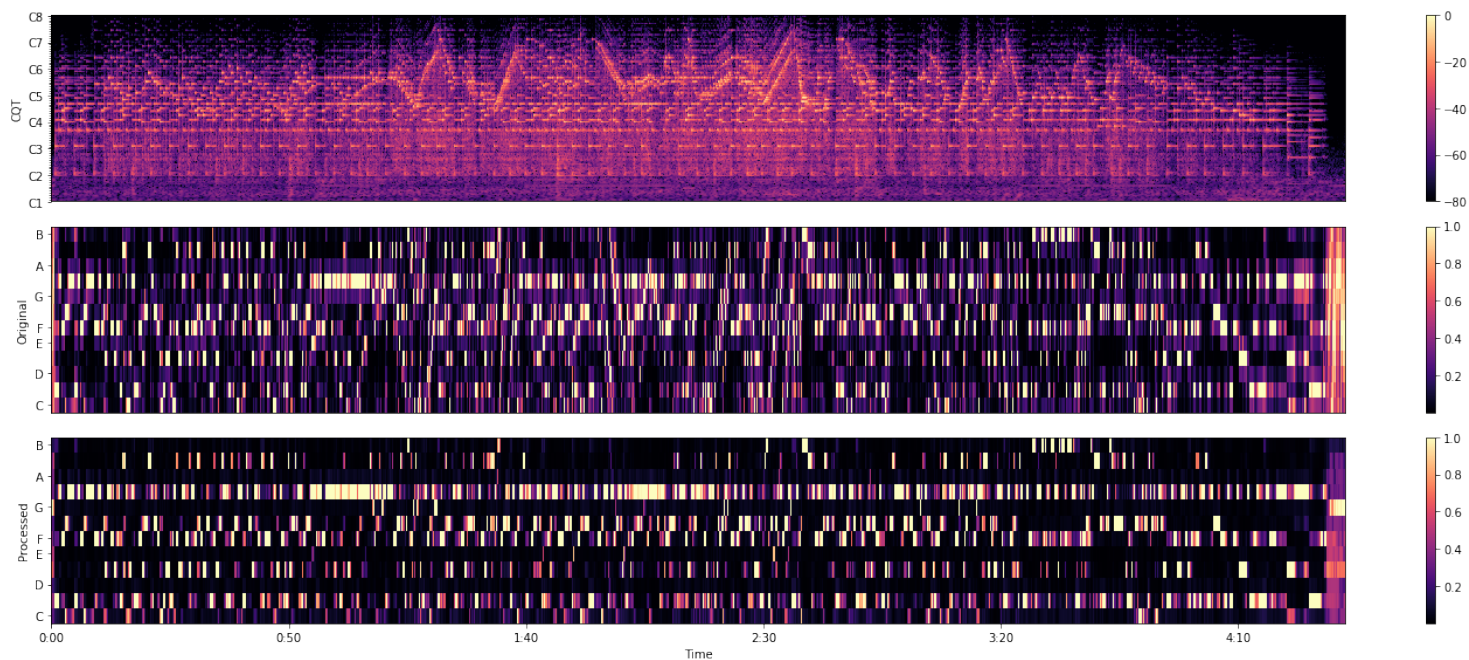


Before and After

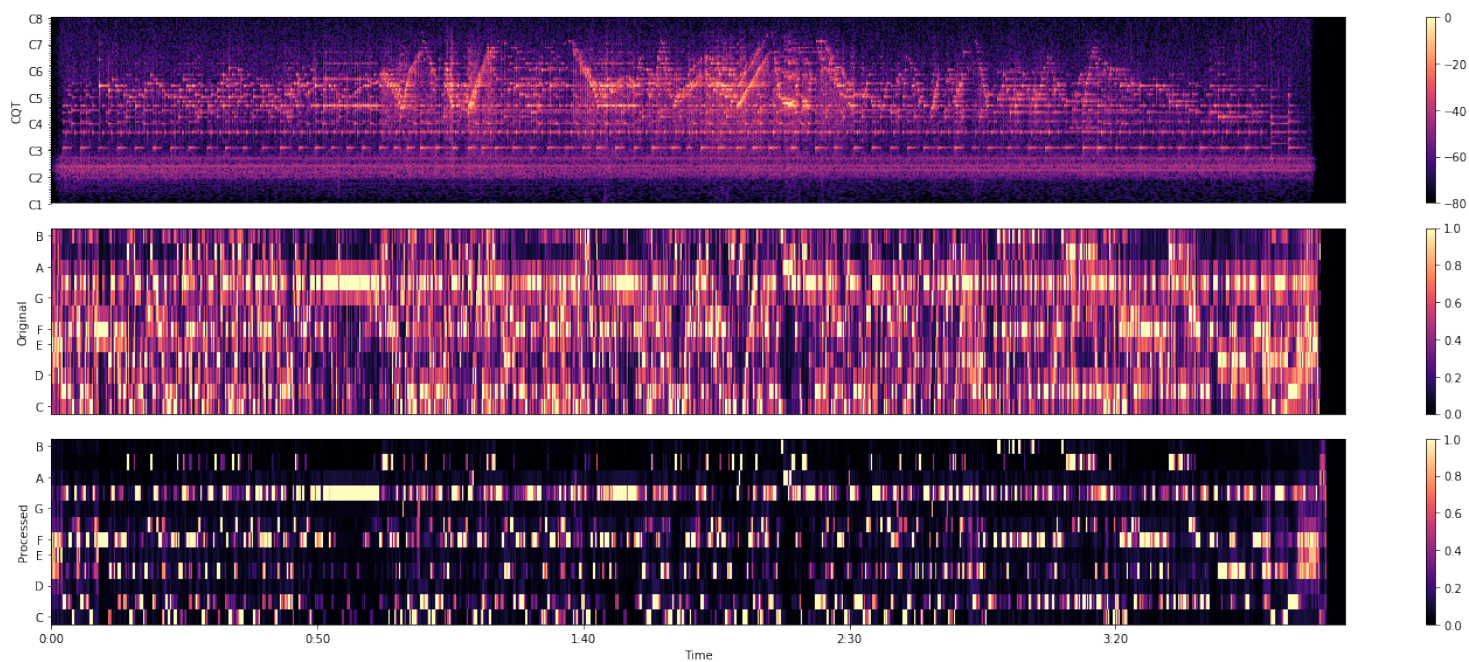


Applying chroma enhancement techniques to source files

Source1

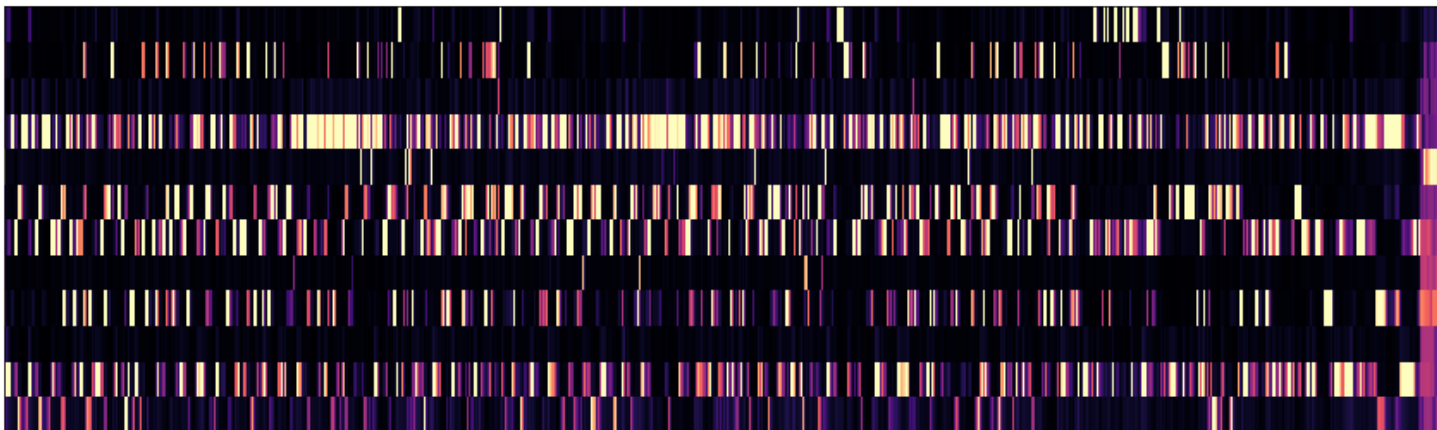


Source2

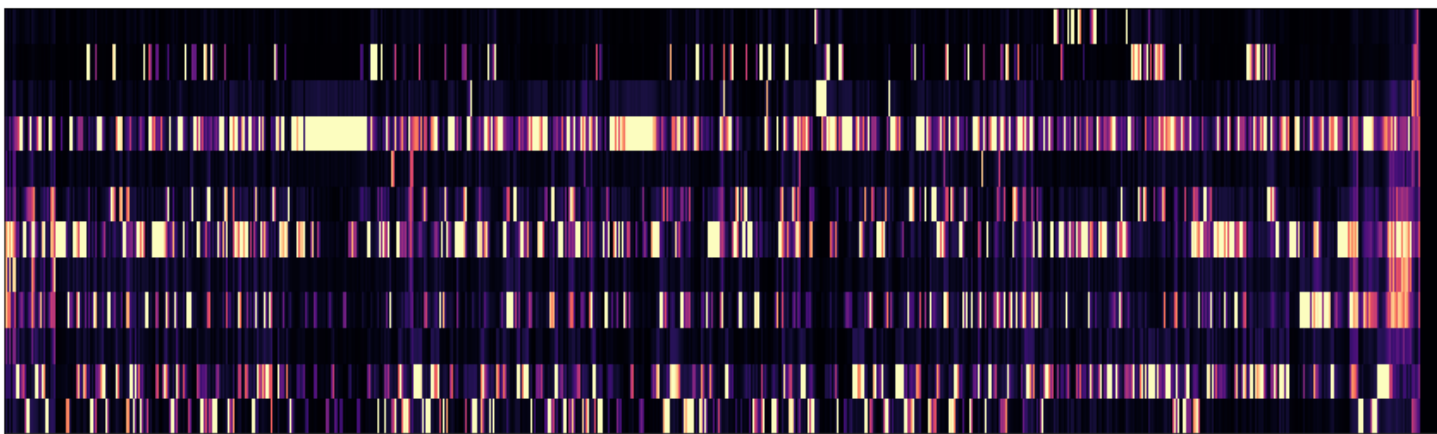


Output comparisons for testing

Source1



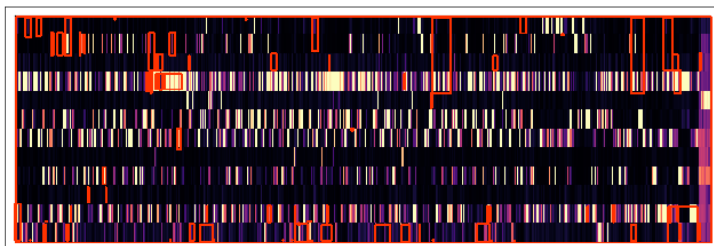
Source2



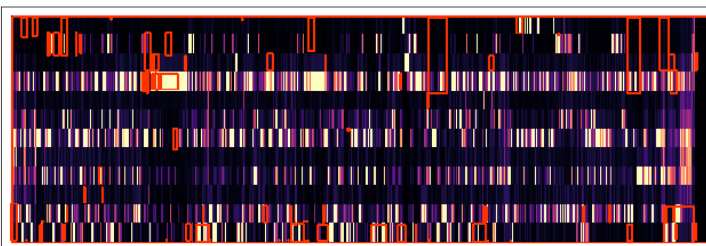
Run imageDiff

SSIM: 0.2895809881272474

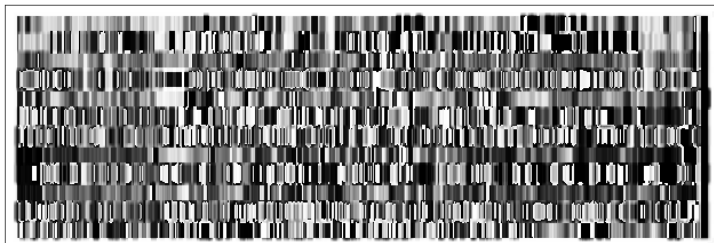
Source1



Source2



Diff



Threshold

