

Análise Algoritmo Frame Diff

```
In [11]: # carregamentos iniciais

import framediff
import matplotlib.pyplot as plt
import sys
import numpy as np
import util

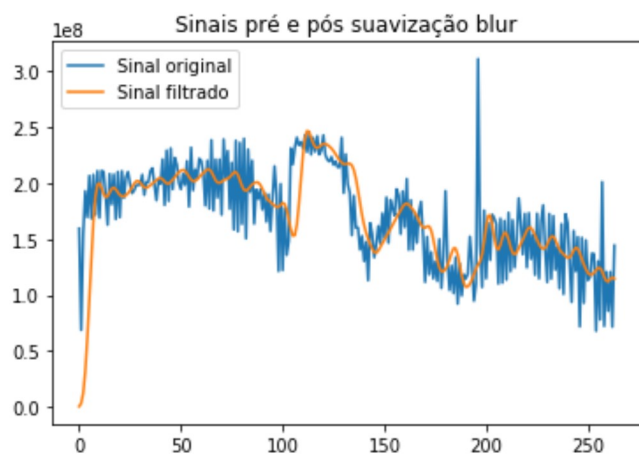
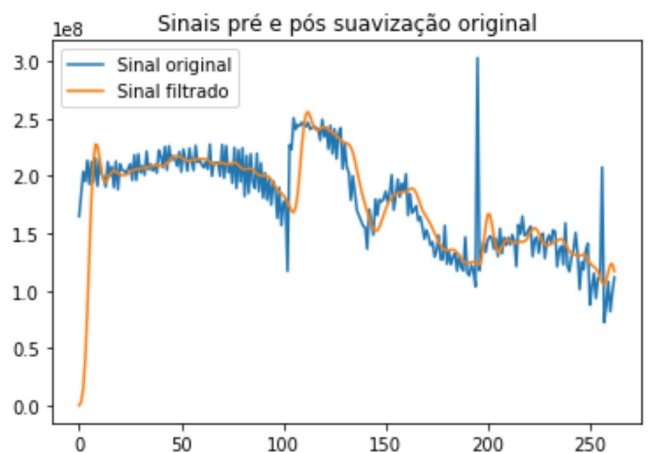
def getdY(frame):
    return frame.dY

dY = np.vectorize(getdY)
videos = {'original' : './in/thecrimesofgrindelwaldTrim.mp4',
          'blur' : './in/grindewald_blur.avi',
          'outro' : './in/outro.mp4'
          }
```

Plotar assinatura pura X filtrada

```
In [12]: for i, v in videos.items():  
    plt.figure(i)  
    fingerprint = framediff.run(v)  
    ass = dY(fingerprint)  
    ass_lowpass = util.butter_lowpass_filter(ass, 3.5, 30.0)  
    plt.title("Sinais pré e pós suavização {}".format(i))  
    plt.plot(ass, label="Sinal original")  
    plt.plot(ass_lowpass, label="Sinal filtrado")  
    plt.legend()  
  
plt.show()
```

```
-----True FrameDiff-----  
262/263 (99.6%)  
-----True FrameDiff-----  
263/264 (99.6%)  
-----True FrameDiff-----  
241/242 (99.6%)
```



Original X Cópia + Distorção

```
In [13]: for i, v in videos.items():
          fingerprint = framediff.run(v)
          ass = dY(fingerprint)
          ass_lowpass = util.butter_lowpass_filter(ass, 3.5, 30.0)
          plt.plot(ass_lowpass, label=i)

          plt.title("Sinais original e distorcido")
          plt.legend()
          plt.show()
```

```
-----True FrameDiff-----
262/263 (99.6%)
-----True FrameDiff-----
263/264 (99.6%)
-----True FrameDiff-----
241/242 (99.6%)
```

