SEG Working Workshop 2018

By Derek Parks and Mark Mlella

AIM

Read segy into python

Visualize segy volume in 3D

Run attributes on cross-sections

Convert python arrays into rsf for madagascar

Read picked horizons

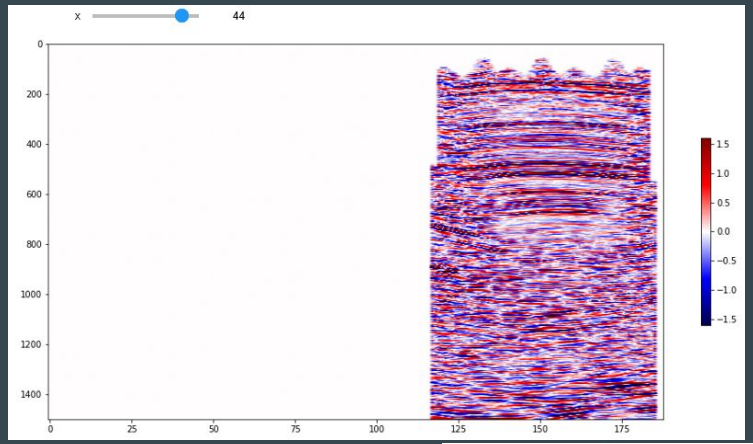
2D startal slicing

Volume flattening

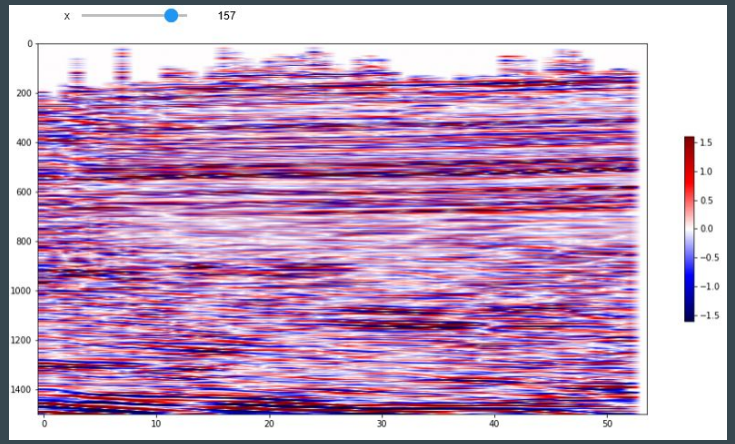
Spectral Decomposition and visualization

Reading the data and slicing in all 3 dims

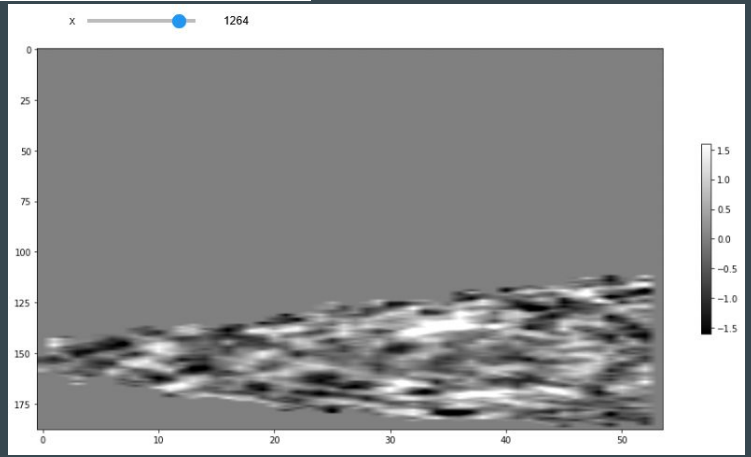
Cross-line



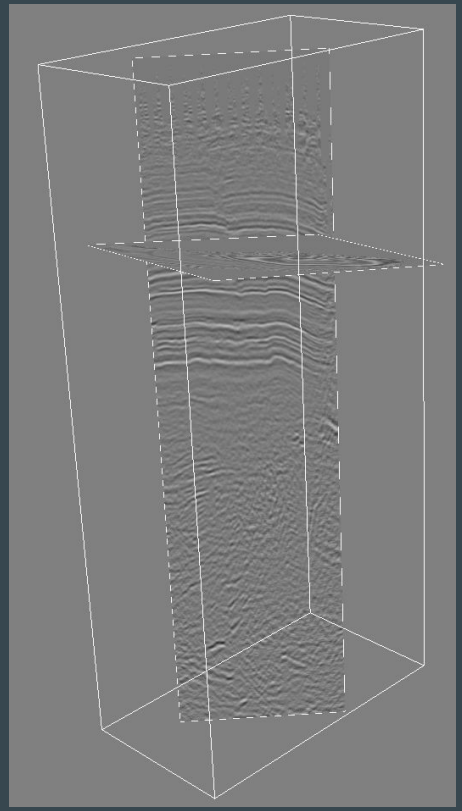
In-line



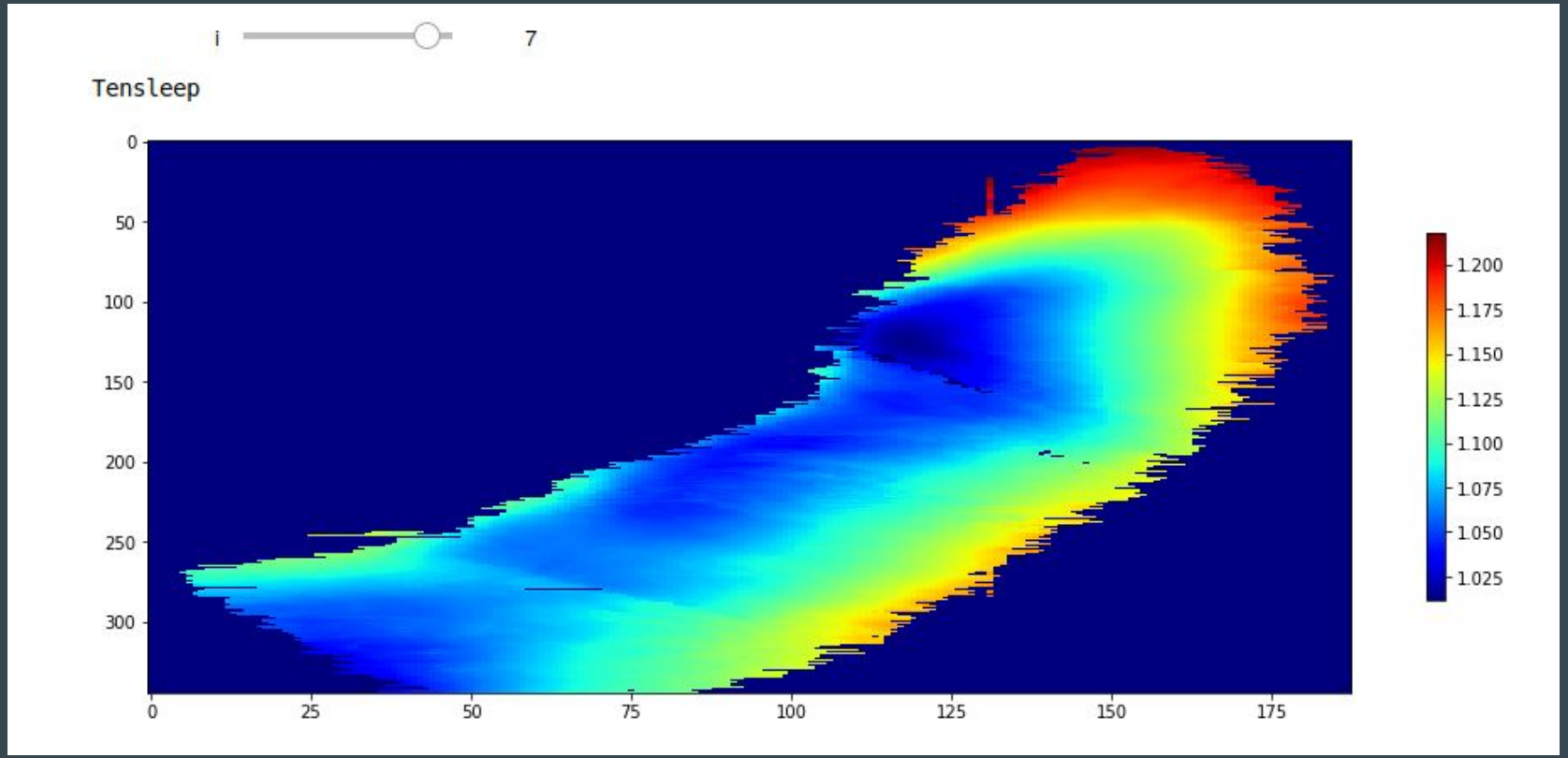
Time slice
(orientation bug)



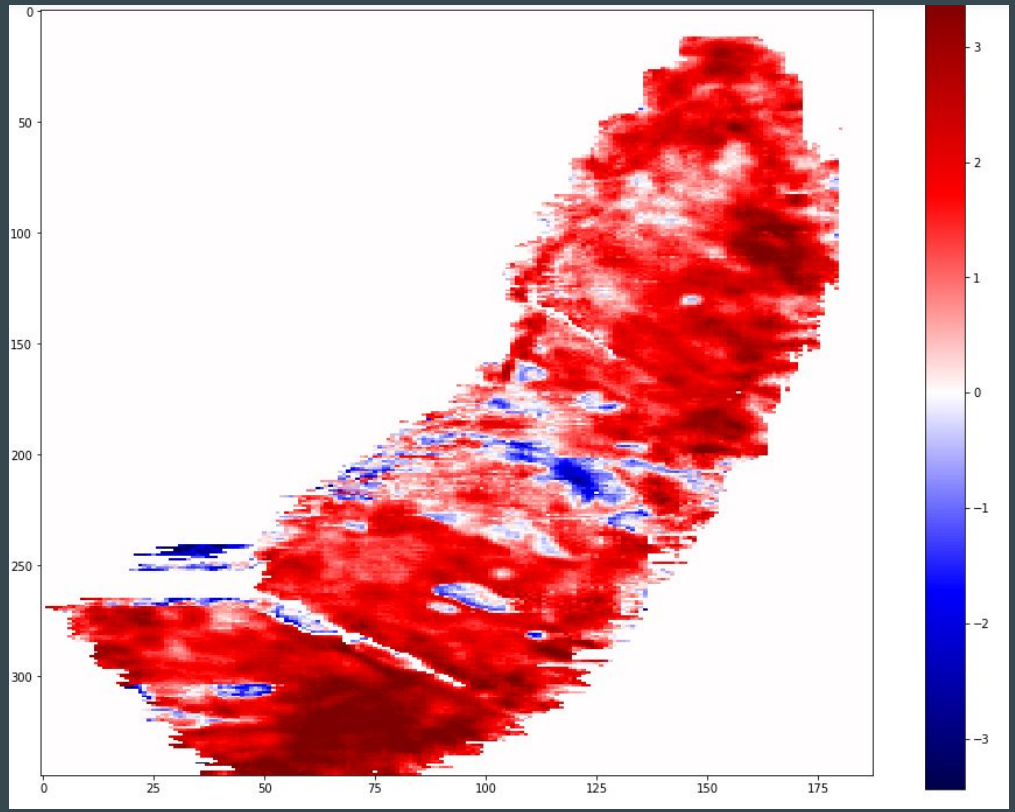
3D Viz with mayavi



Read in horizons

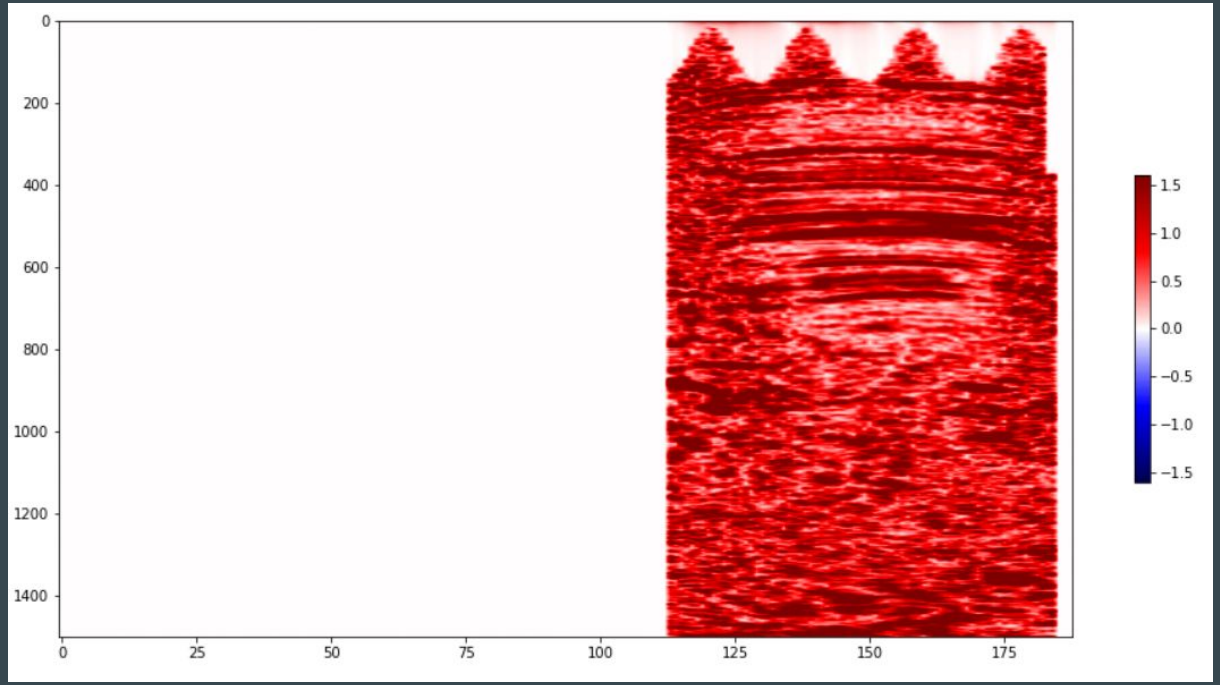


Stratal Slice

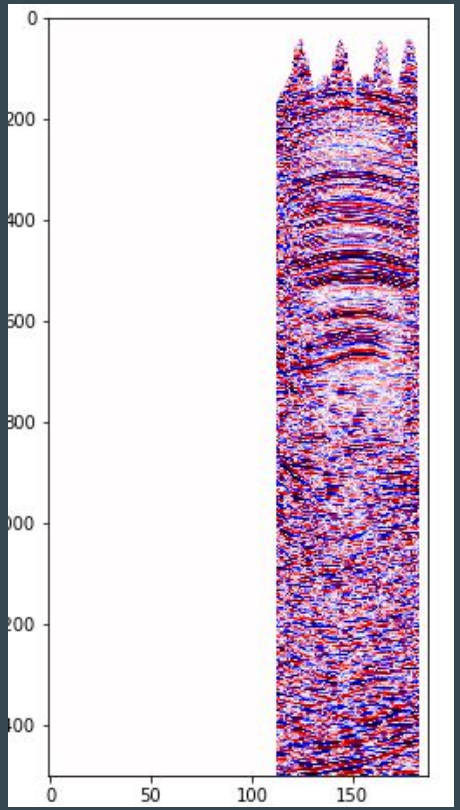


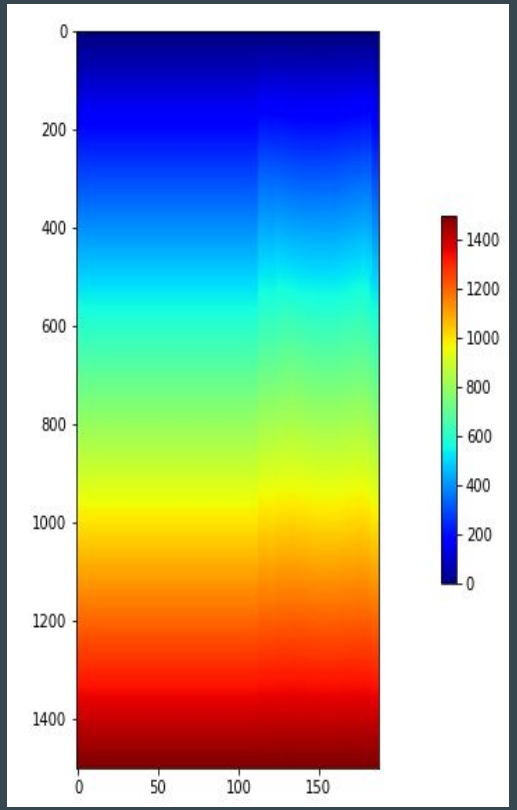
Run attributes on cross-sections

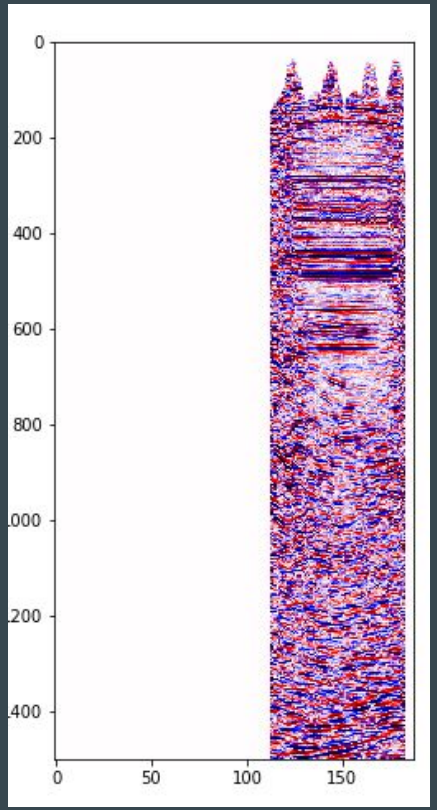
- Amplitude envelope



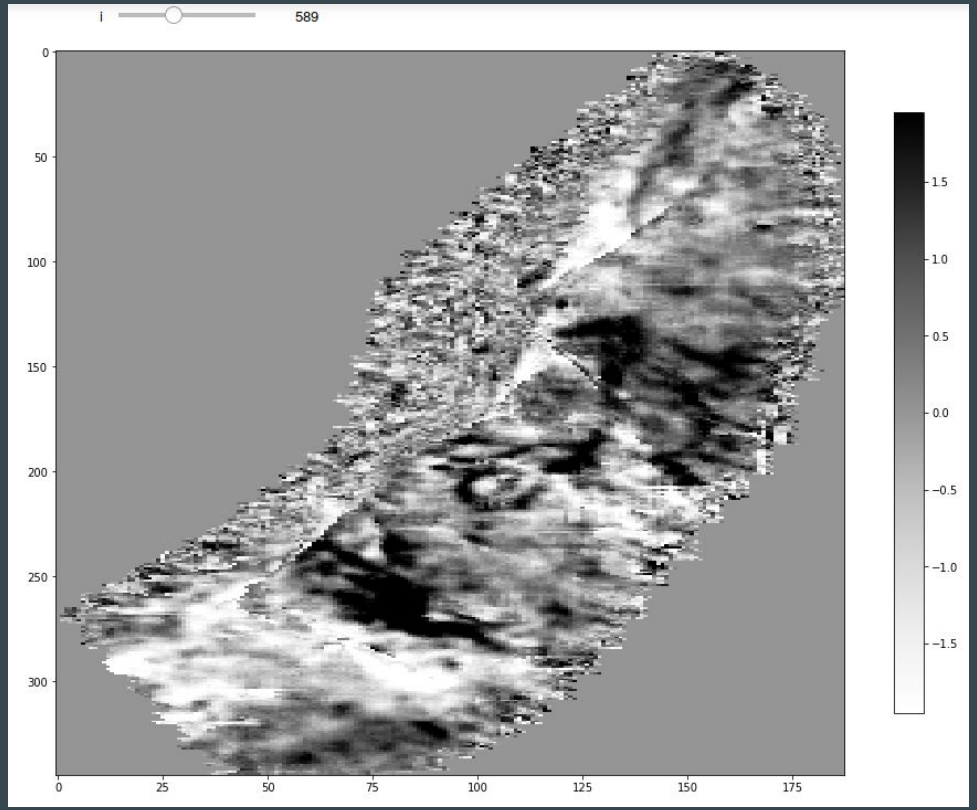
Volume flattening





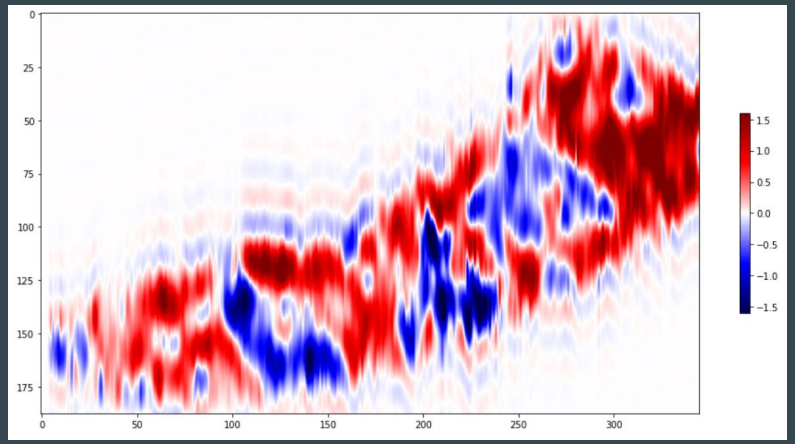


Volume flattening - horizontal slice (aka geologic time)

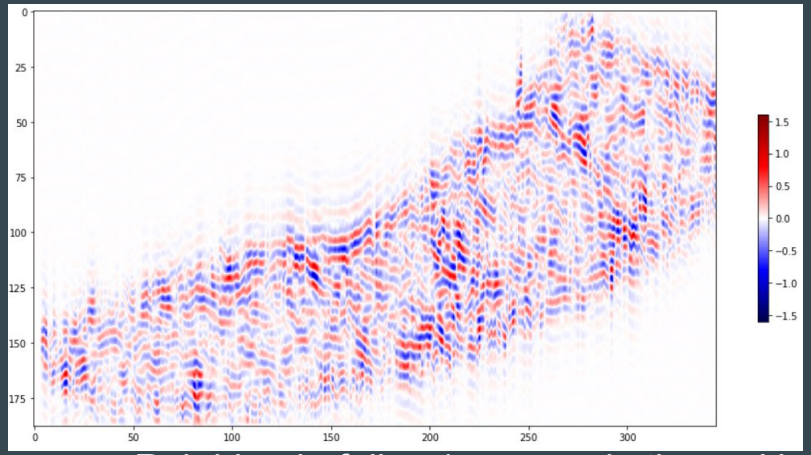


Filter low, mid, and high frequencies into 3 seismic volumes for rgb blend

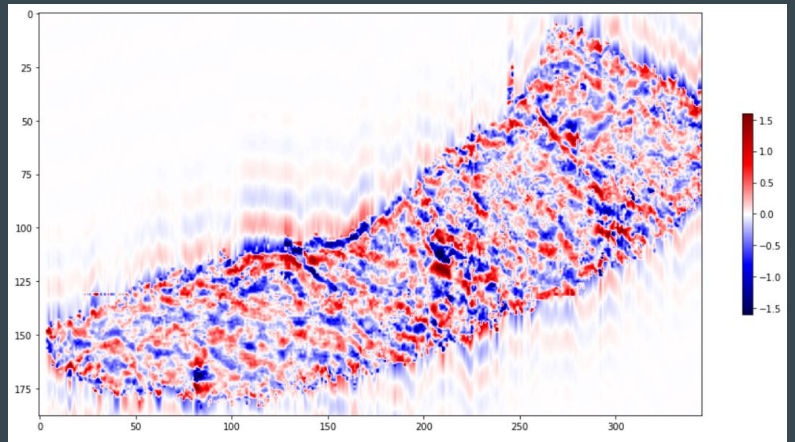
Lowpass



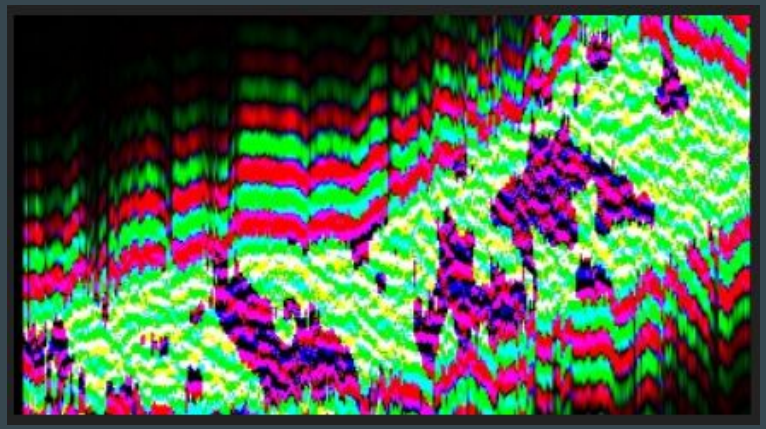
Midpass(40-80 Hz)



Highpass



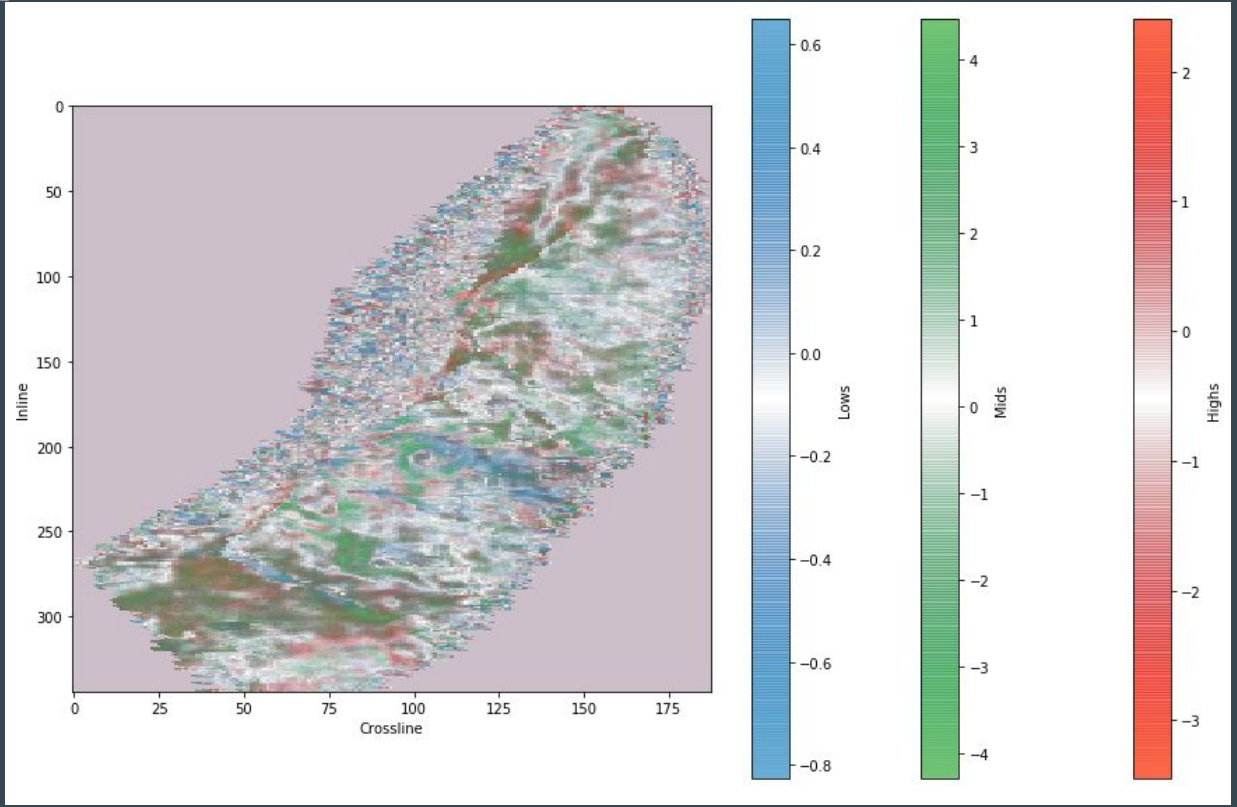
Rgb blend - failure/ success in the making



Spectral decomposition

I = 601

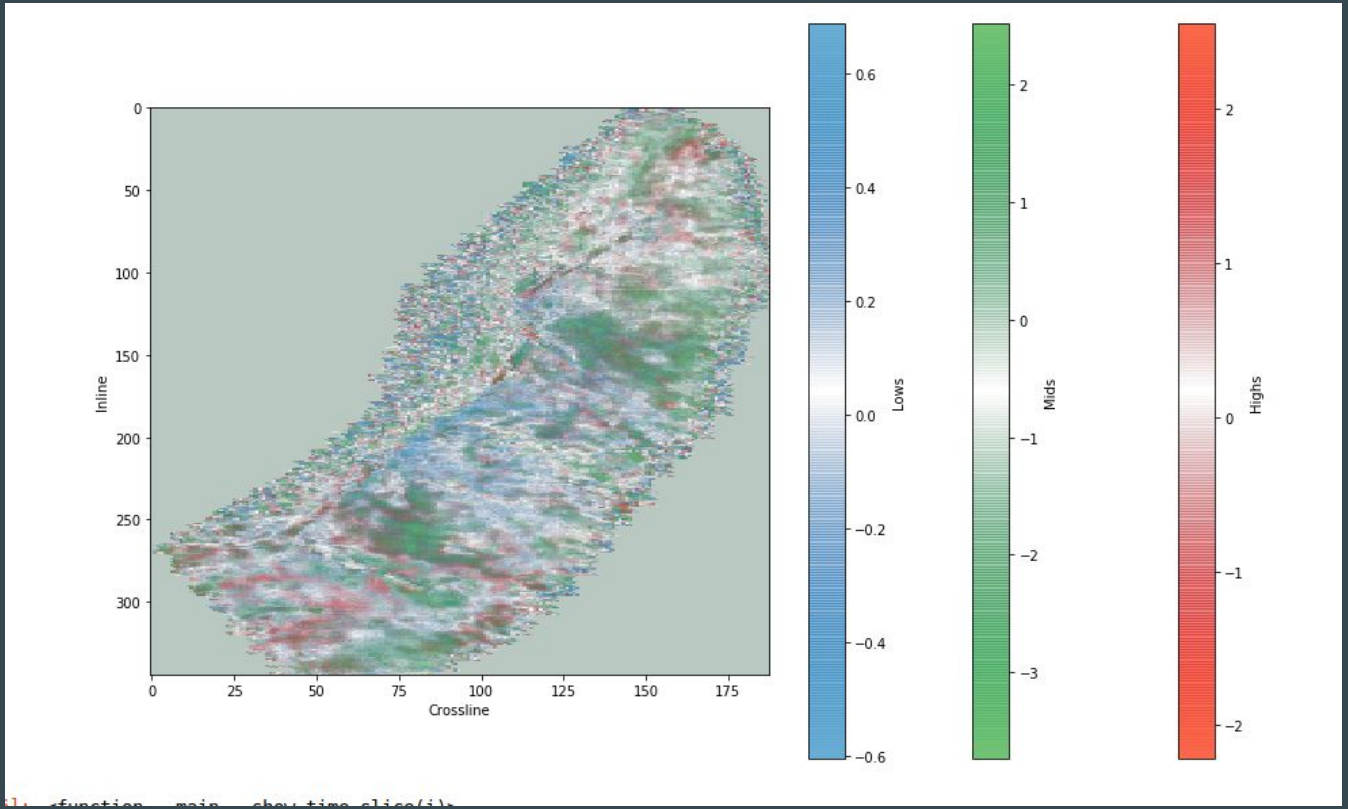
Lows:1 - 10Hz
Mids:5 - 50Hz
Highs:40 - 200Hz



Spectral decomposition

I = 593

Lows:1 - 10Hz
Mids:5 - 50Hz
Highs:40 - 200Hz



References

Joe Kington: https://github.com/joferkington/scipy2014-3d_seismic/

Matt Hall: https://github.com/kwinkunks/notebooks

Alessandro Amato del Monte: https://github.com/aadm/geophysical_notes

Data - Teapot dome

Thanks to Rocky Mountain Oilfield Testing Center for the Teapot dome dataset

http://www.fe.doe.gov/facilities/rmotc/