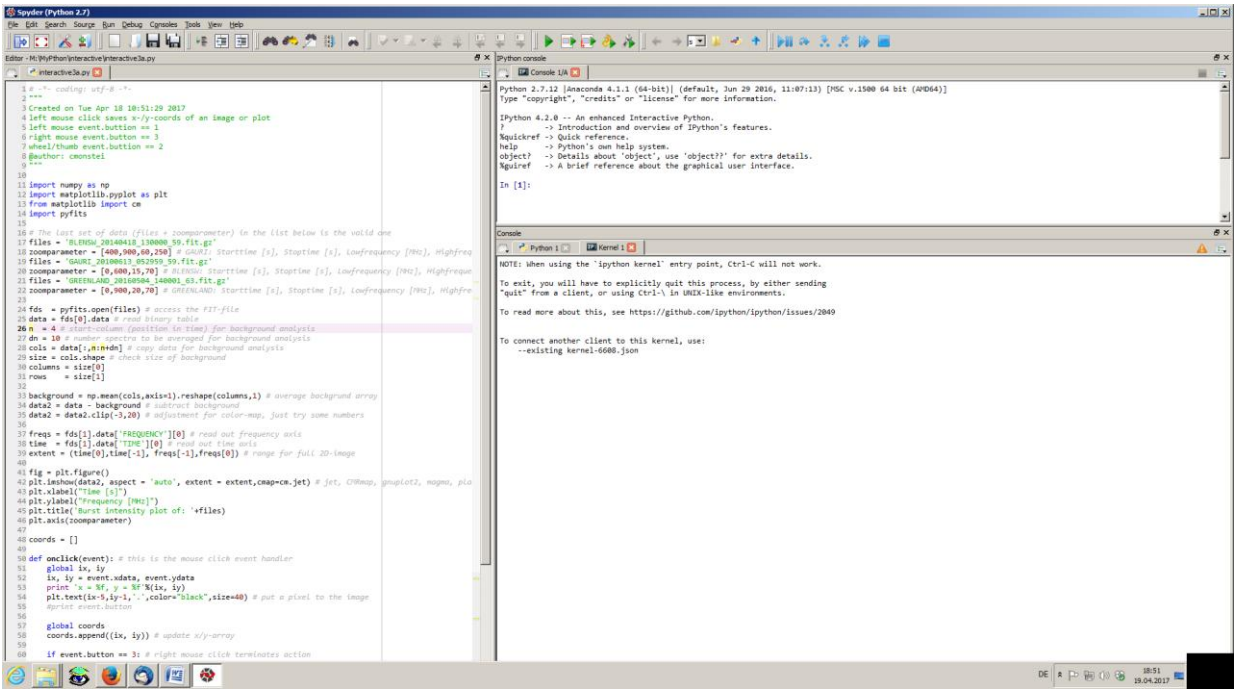
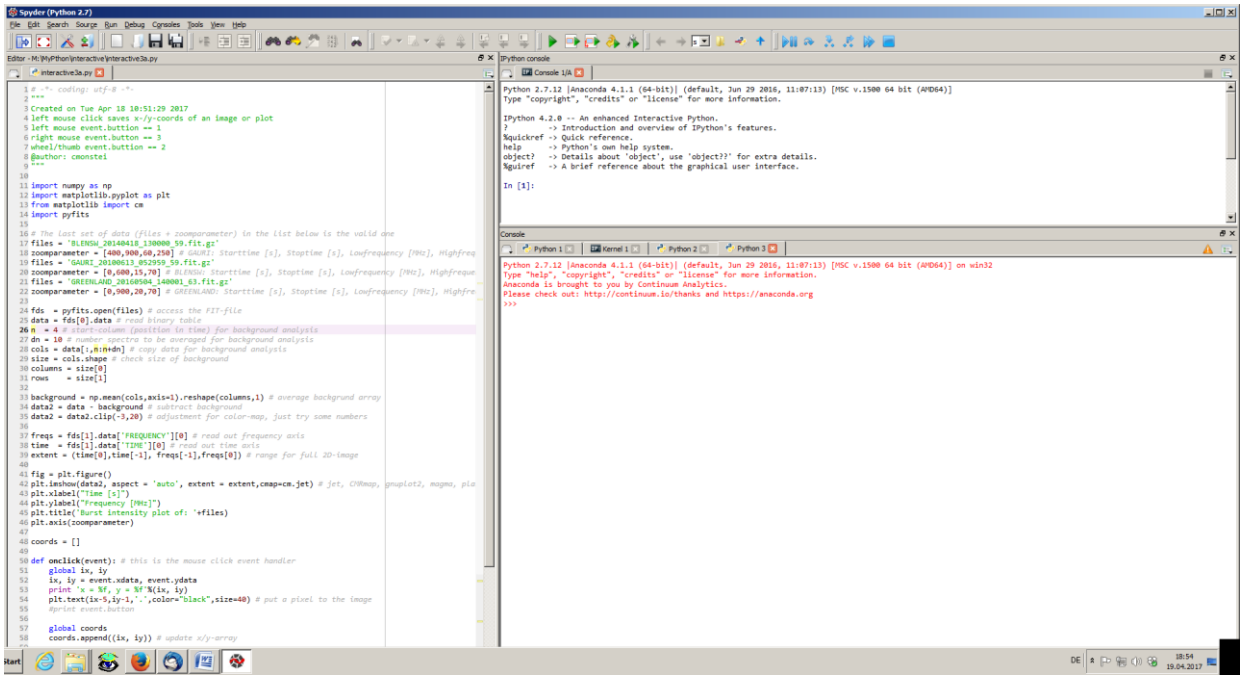
Interactive tool to generate time/frequency tables out of a type II burst for convenient CME speed analysis

1. Start Spyder (Python 2.7) as part of Anaconda2 (64-bit) as instructed at Mekelle workshop 2017
2. Load the Python script, currently named as interactive3a.py
3. The FIT file should be in the same directory as the Python script {will be improved later}



In this example 3 different file and parameter are provide for testing. The last entry at rows 21-22 are the valid ones. You may change the sequence for the other ones.

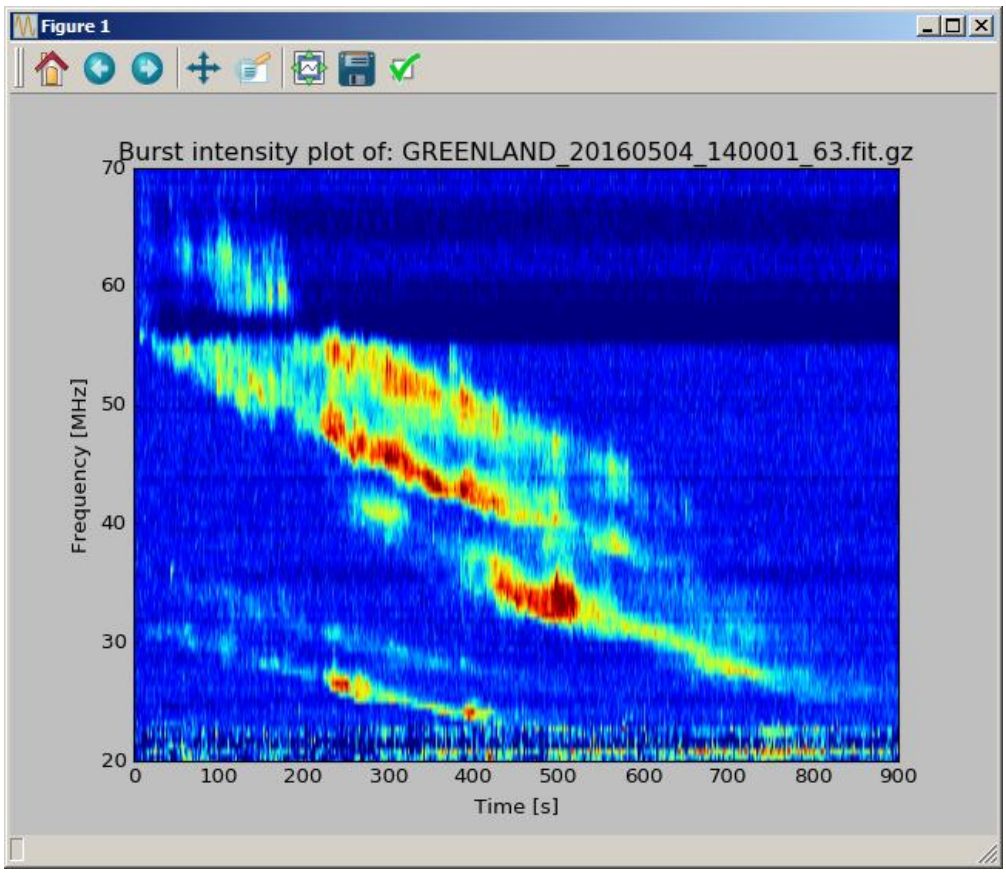
4. Open an additional console from Consoles-<Open a Python console (not IPython!)



5. Fill in the filename of the FIT-file you want to investigate (*.fit or *.fit.gz)

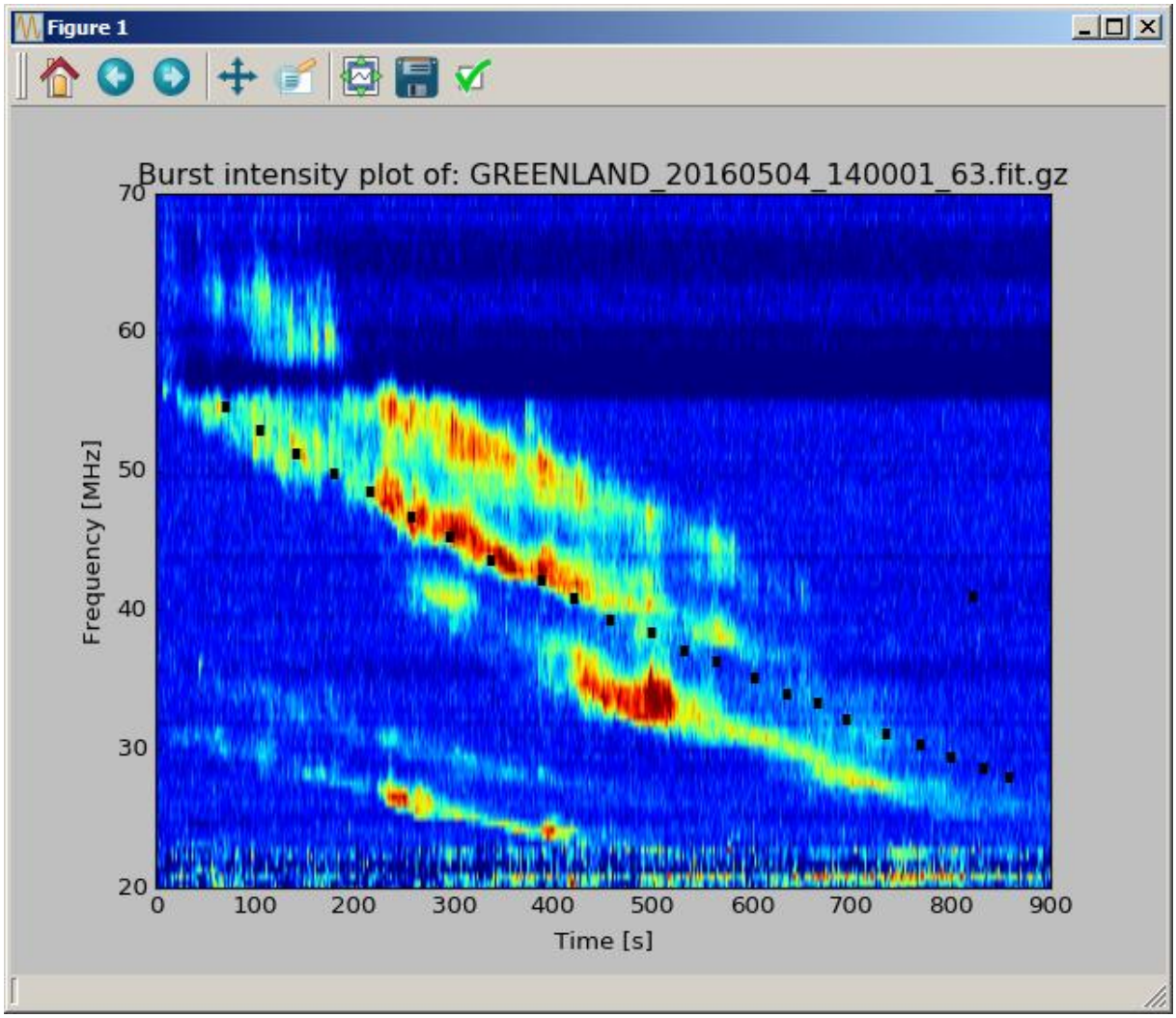
6. Fill in the estimated time-range in seconds counted from file start and interesting frequency range. You may change all parameter by trial and error until you see the full burst as demonstrated in the following plot.

7. Press F5 or press the green triangle. Now you should see something likes this below:

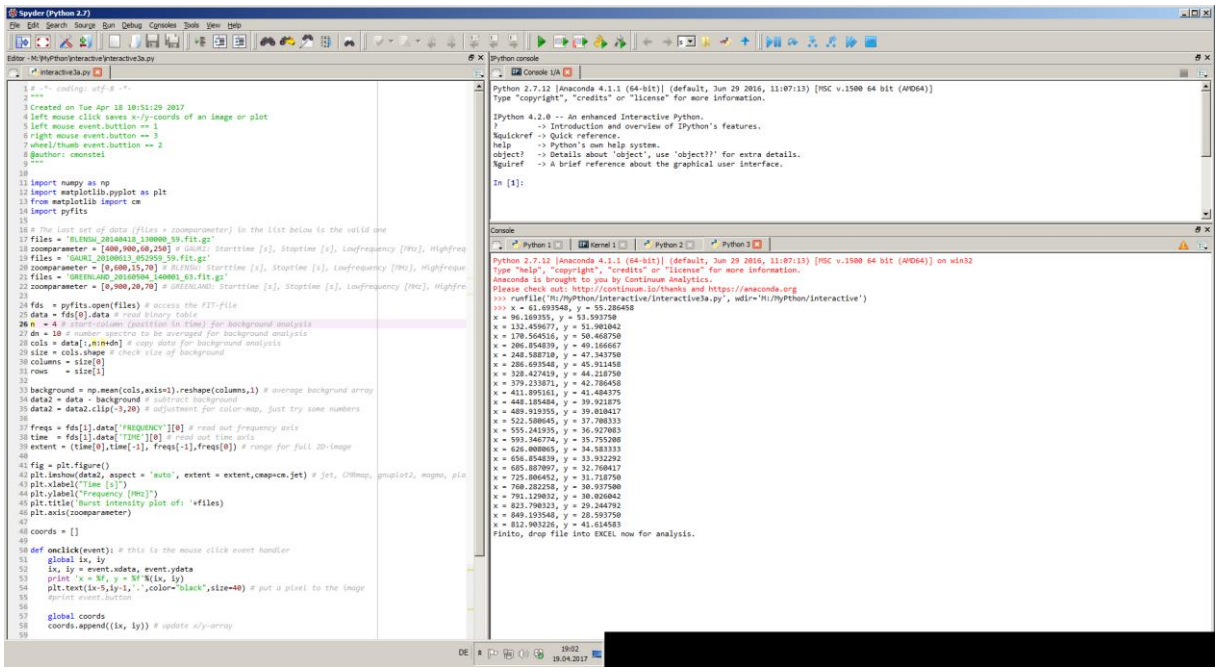


Be aware that this plot might be hidden behind your Spyder application, depending on your monitor resolution, so just move Spyder to the side or to a second monitor.

8. Decide the structure to analyze and start to press left mouse button allong the burst structure as precise as you can. Each click produces a black pixel on the image and on the the same time the time/frequency-values are written to one of the sypder console. This may look like this:



When you finished clicking press right mouse button which close the script and writes all x/y-values to an ASCII-file which can be imported into EXCEL or any other spreadsheet for further analysis (driftrate, plasma-frequency etc.



The saved list in this example looks like this:

Filename = GREENLAND_20160504_140001_63.fit.gz.txt

Time,Frequency

61.694, 55.286
96.169, 53.594
132.460, 51.901
170.565, 50.469
206.855, 49.167
248.589, 47.344
286.694, 45.911
328.427, 44.219
379.234, 42.786
411.895, 41.484
448.185, 39.922
489.919, 39.010
522.581, 37.708
555.242, 36.927
593.347, 35.755
626.008, 34.583
656.855, 33.932
685.887, 32.760
725.806, 31.719
760.282, 30.938
791.129, 30.026
823.790, 29.245
849.194, 28.594
812.903, 41.615