Alex Pettit: *SDR# > IFavg > HL3D > Rinearn Processing Sequence:*

Download AirSpy SDR# Studio with Kaminski IF_avg pre-installed

HERE

IF_Ave Ver 2.7 & 2.8 PlugIn for SDR# Studio

Full Installation of SDR# & IF_Ave 2.7

https://www.dropbox.com/scl/fi/2f67lyu6qgt2cp98rg9kp/SDR-2.ZIP?rlkey=y82yv6jzjyu7e92sap3x8ewm7&st=tcil7w3s&dl=0

The latest Rev of **IF_Ave allows**

Saving and Recalling named Background Correction Files replace the above with this newer * DLL

IF_Ave Version 2.8

https://www.dropbox.com/scl/fi/aitn8xtookwwxm6mvybkp/SDRSharp.Average.dll?rlkey=667f4a83958krn77ie2862jxf&dl=0

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Configuration / Operation / Plotting / HLine3D Processing and Rinearn Graphics

HERE

https://github.com/AP-HLine-3D/HLine3D

What is the (D. Kaminski) " IF_average " ?

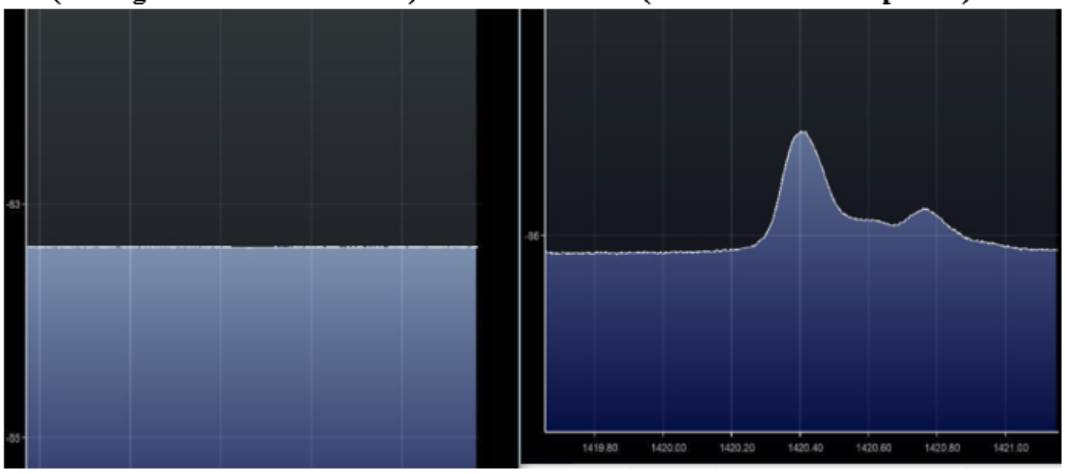
IF_ave is a Radio Astronomy Plug-in for the
AirSpy SDR# Studio SDR Control and Acquisition Software package.

IF_ave allows spectral averages of several minutes (hundreds of thousands of averages) to be acquired, auto numbered & saved in a 2-column (freq/ampl) *.txt format.

IF_ave allows a pre-defined Background Correction File to be obtained to (in real time) correct the Spectrum Display Plot . It removes the large M-Curve filter shape commonly seen in other software from both the Display and Saved Data Files.

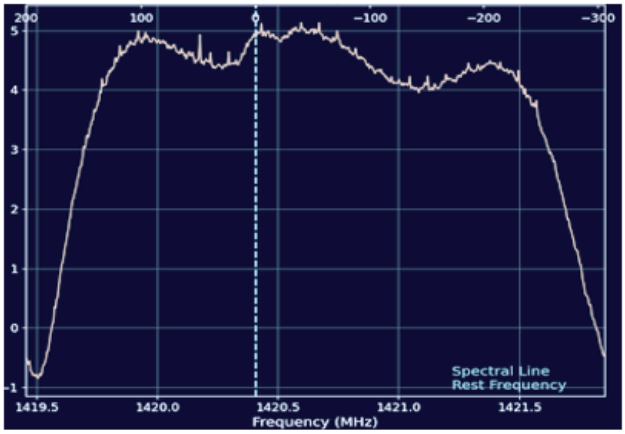
This: the IF_avg Real Time Spectral Display

(Background Correction Plot) **(Corrected H Line Spectra)**



VS

This : In other software, the M Curve dominates the displayed spectrum such that H Line Spectral Data is difficult to see



Background Correction Technique

The M-Curve is a Gain Variation over the spectrum frequency range from the filter shape.
Thus the Data Frames are ***Divided By the Background Correction File***

To Acquire this Correction Frame,

a) Point at an empty part of the sky (far away from the milky way and H-line sources)

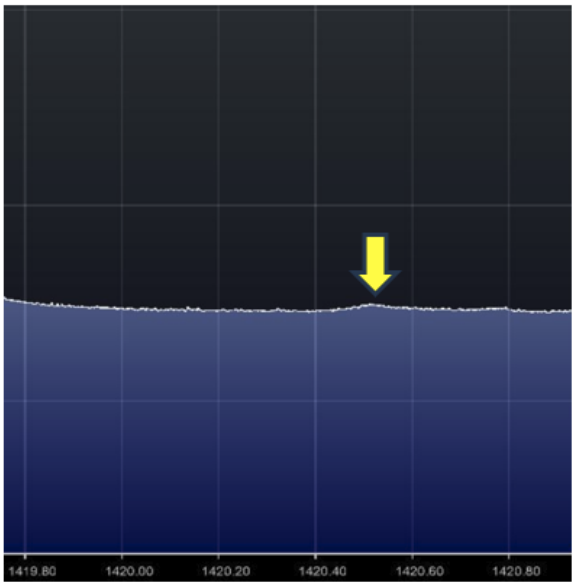
b) Point the antenna towards the Ground. But if there is any H line overhead, it will bleed into the background. Sometimes pointing the dish ground-ward works, but it may also pick up neighborhood RFI

c) If the system uses a simply removable LNA such as the SAWbird, disconnect it from the antenna and attach a 50 Ohm Load to the LNA Input for the process.

d) For systems where that is not easily done (Discovery Feed & others) , use a 1" stack of Dense Conductive Foam over the Feed. (Al Foil changes the SWR, so I never used it, but it apparently also Works fine for this purpose)

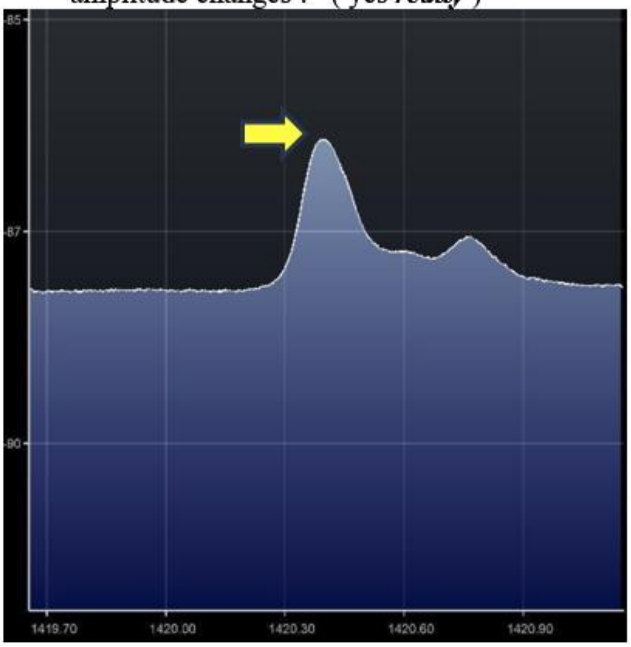
Advantage of the Background Correction ?

1) It allows you to see even the faint H line ~ RA12:00 regions .



2) See in Real Time : Large & Small amounts of RFI and turn off the monitor or appliance before it disrupts hours of data collection !

3) AND when acquiring Bright H Line regions, observe real-time **minute-by-minute** amplitude changes ! (yes ***really***)



THIS allows you to monitor and time correlate your data acquisition plots to accurate spectrums as this from CCERA