

¹⁹F NMR on DRX 500 in Malott B042

Justin Douglas (justindouglas@ku.edu) – KU NMR Labs v0.1 3/12/14

Special Note:

Please don't try this experiment if you have not been trained by Justin or Sarah

How to recable and tune the DRX 500 for ¹⁹F

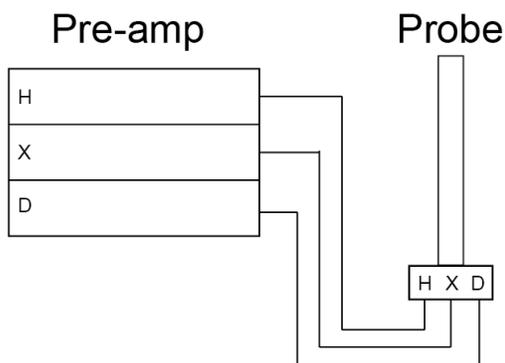
#1) Load your sample, lock, shim and acquire a 1D ¹H NMR spectrum. It is always valuable to record a 1D ¹H to check the quality of your sample. Furthermore, the 1D ¹H spectrum is an efficient way to assess the shimming.

Or don't if your solvent is not deuterated. Be sure to turn off sweep if you do not lock.

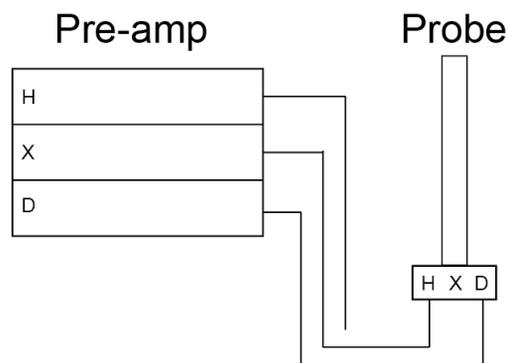
#2) Create a new experiment by typing "edc" in the Topspin command line. Choose "F19" for the experiment. Type "getprosol" to load probe-specific acquisition parameters.

#3) You have to recable the spectrometer. The issue is that even though the outer coil (normally ¹H) can be tuned to ¹⁹F, the ¹H preamplifier is incompatible with ¹⁹F. The X preamplifier is compatible with ¹⁹F, so we have to connect the ¹H channel to X channel preamp. See Figure below

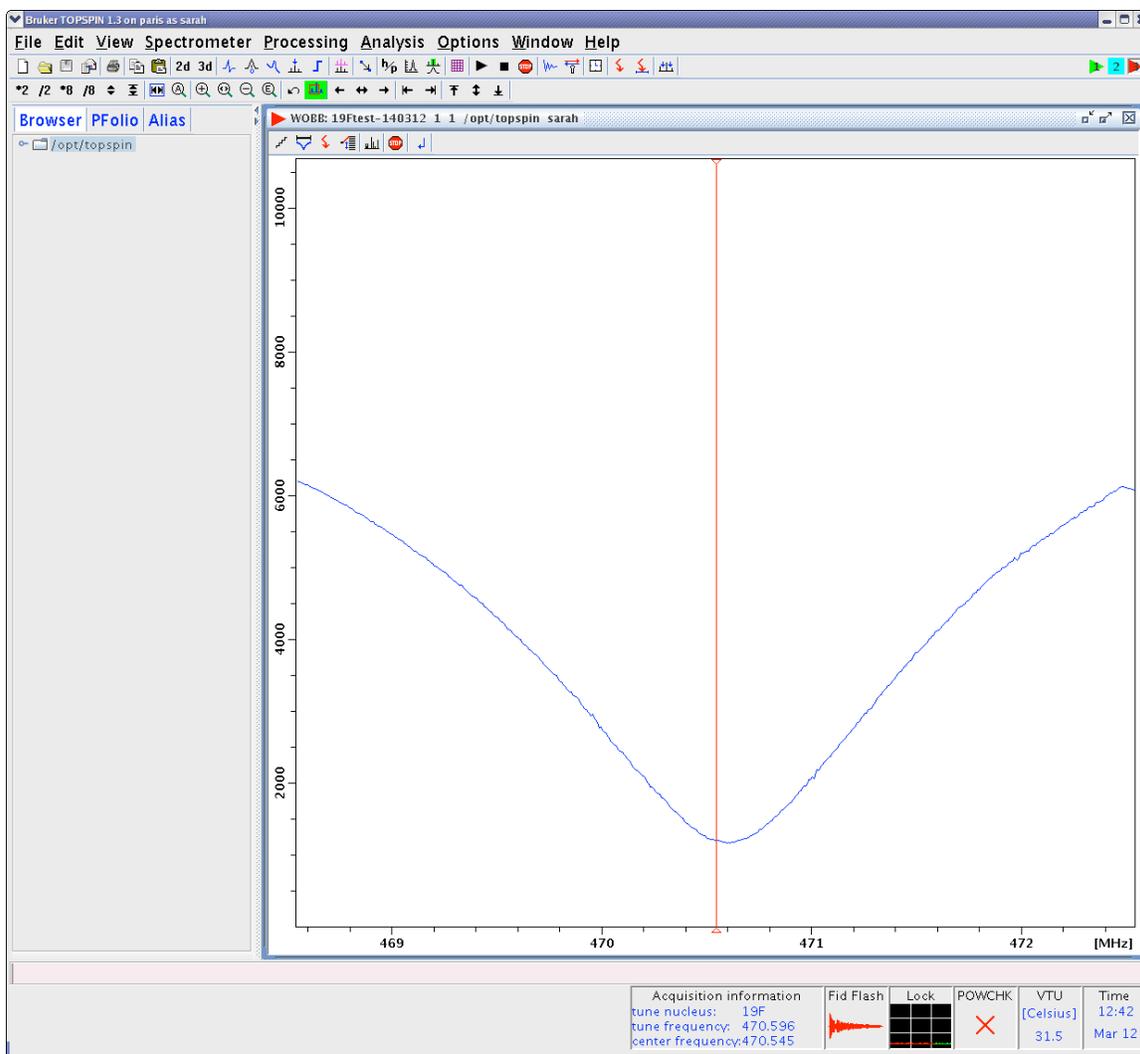
Normal Configuration



¹⁹F configuration



#4) Type "wobb" at Topspin command line. Go to the probe. You'll have to tune the probe to ¹⁹F by turning the silver screw labeled "T" ~four turns **to the right**. If you have it tuned correctly it should look like the following:



#5) rga, zg, ef, apk, abs n

#5) When you are finished it is critical to recable and retune for 1H. Put a sample in CDCl₃ in the magnet, recable. Load "PROTON" experiment and turn "T" screw back ~4 turns **to the left**.

If you cannot get the dip centered on the red line, click the  button and set width to 20 MHz to see a larger sweep window. Use the "T" screw to center the dip on the red line.