Instructions for Working Unlocked on the 300 MHz Bruker Spectrometer

(1) Put in a deuterated reference (ex. The lineshape sample: 10% $CHCl_3$ 90% deuterated acetone)

(2) lock the sample and gradient shim

(3) Check the proton line width and multiplet patterns to see how accurate your shim is. If you find your shim is not sufficient then you can either re-run the gradient autoshim or manually shim the magnet.

(4) Once the shim is sufficient you must reference the spectra. Be sure to write down the sr value. This value can be obtained in the ProcPars tab or by simply typing sr into the command line and hitting enter. The sr value is essential if your un-locked sample does not contain an internal reference.

(5) Now you can remove the deuterated reference sample and put your sample into the magnet.

(6) Go to the BSMS and turn off both the lock and sweep under the lock tab. Be sure that they are both off or the unlocked experiment will not work.

(7) Type gradshim in the command line and press enter. This will bring up the gradient shimming protocol for shimming the magnet based on the proton signal in your sample. Run the gradient shimming protocol.

(8) Acquire your spectra.

(9) You may need to repeat the proton gradient shimming process in step 7 until you are satisfied with your proton line shape and width.

(9) If the un-locked sample does not contain an internal reference you must enter the sr value obtained earlier from the deuterated reference sample. This can be entered by going to the ProcPars tab or by simply typing sr into the command line and hitting enter.

You now have the referenced spectra from your unlocked sample!!!