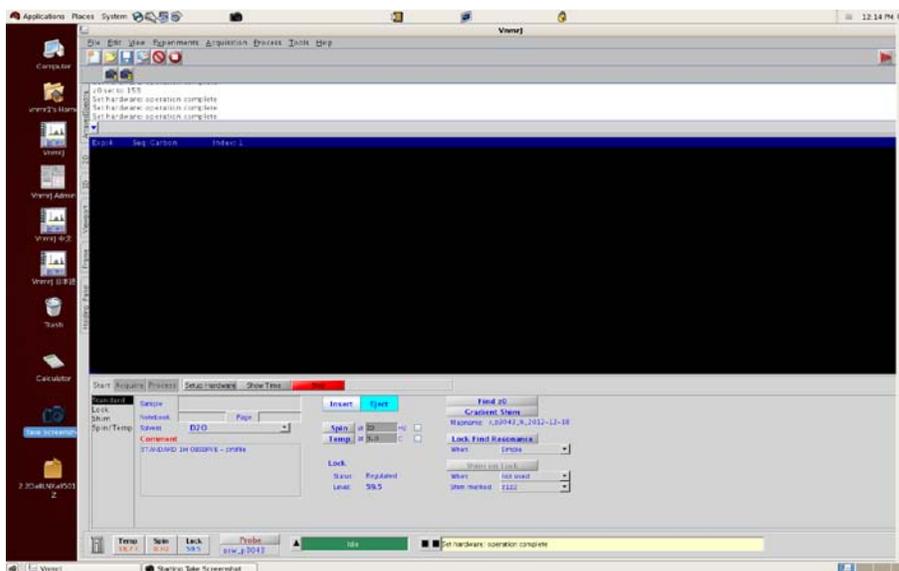




Department of Chemistry NMR Facilities

Varian 300 Tutorial for the acquisition of 1D ^1H and ^{13}C spectra

- 1) log on into the linux account.
- 2) double click on the VNMRJ icon to open the program.

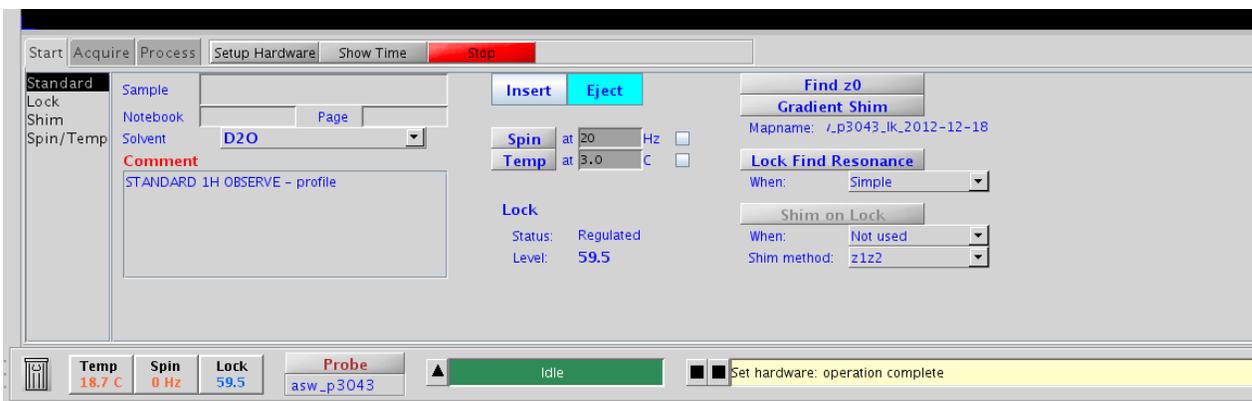


3) insert the tube in the spinner. Use the gauge to measure the depth.



4) On the VNMRJ, type “e” and then press <enter>. Put the sample on top of the magnet. Type “i”/<enter> to insert the sample in the magnet.

5) select the **solvent** on tab Start/standard

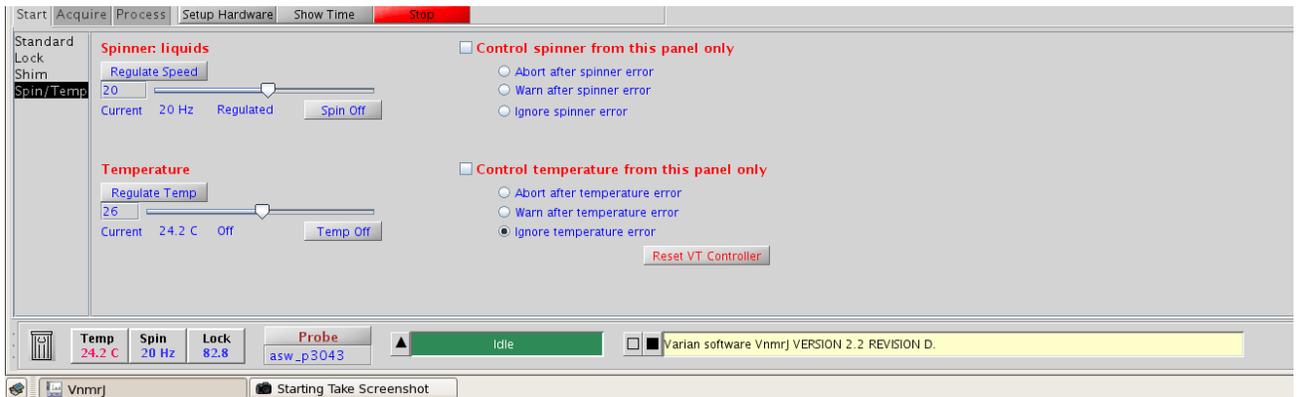


6) on the Start/Standard tab, click on <Find z0> to lock sample.

7) click on <Gradient Autoshim>.

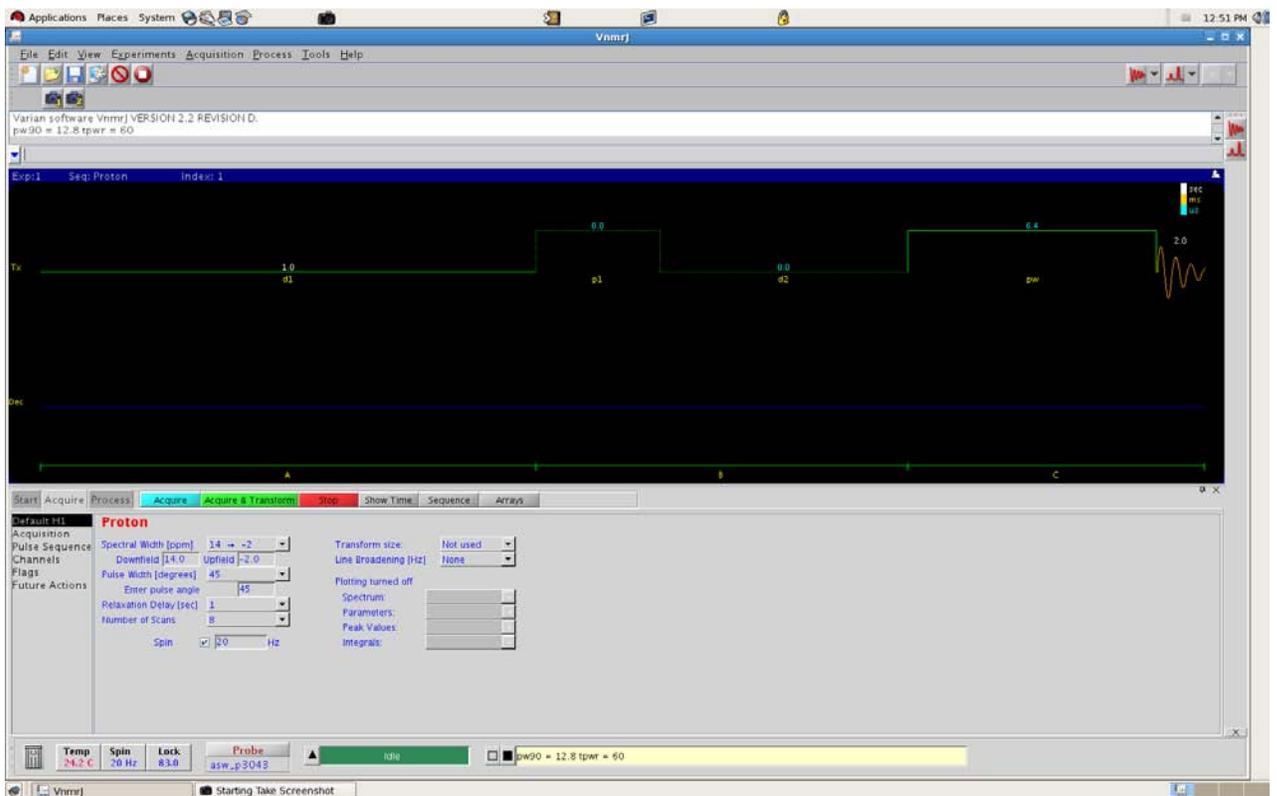
8) When doing gradient shims and Find Z0, the solvent will temporarily switch to D₂O and spinning will turn off.

9) on the tab Start/ Spin/Temp, set the spinning rate to 20 Hz and then press the button “Regulated Speed”.

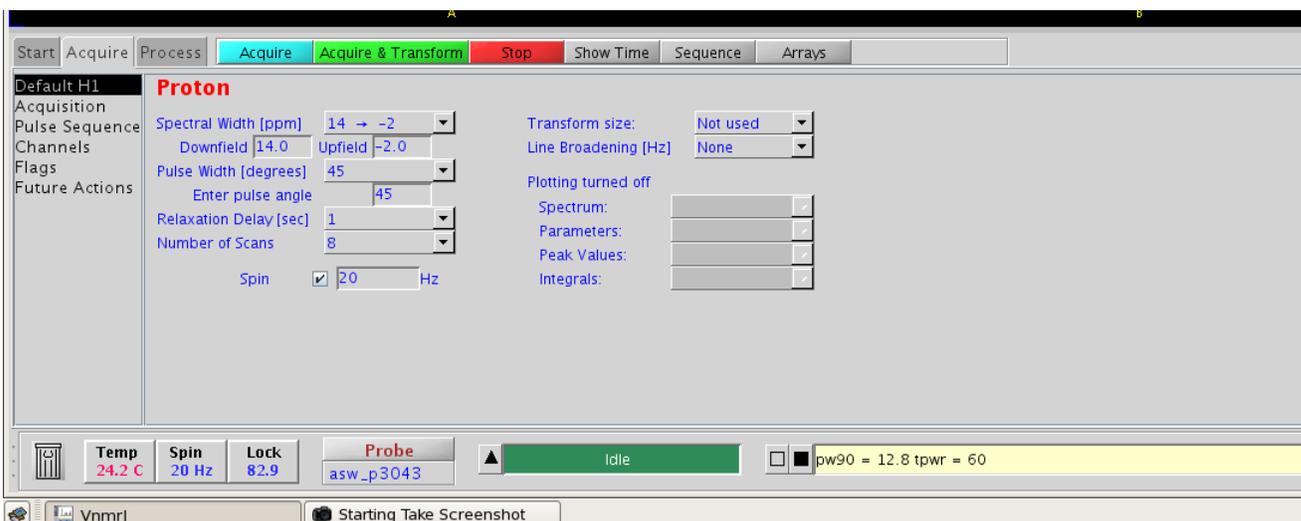


10) to change the experiment, type “jexp+exp n^o”. For example “jexp3”.

11) to choose a 1D-¹H experiment, click on the menu “experiment” and then select “proton”.



12) on the tab Acquire/Default H1 you can modify the experimental parameters if needed.



13) to run the experiment, on the command line type “ga” and then press <enter>. Or just click on <Acquire & Transform>.

14) to display the spectrum, type “wft” and then press <enter>.

15) usefull commands: **wft**: to refresh the spectrum, **aph**: automatic phasing, **vsadj** : adjust the high of the spectrum, **f**: brings back the full spectrum after it was zoomed. **nt**: **number of scans**

16) saving files: in the file menu, select “save as”.

Printing spectra

1) select on the menu File select “Auto Plot”.

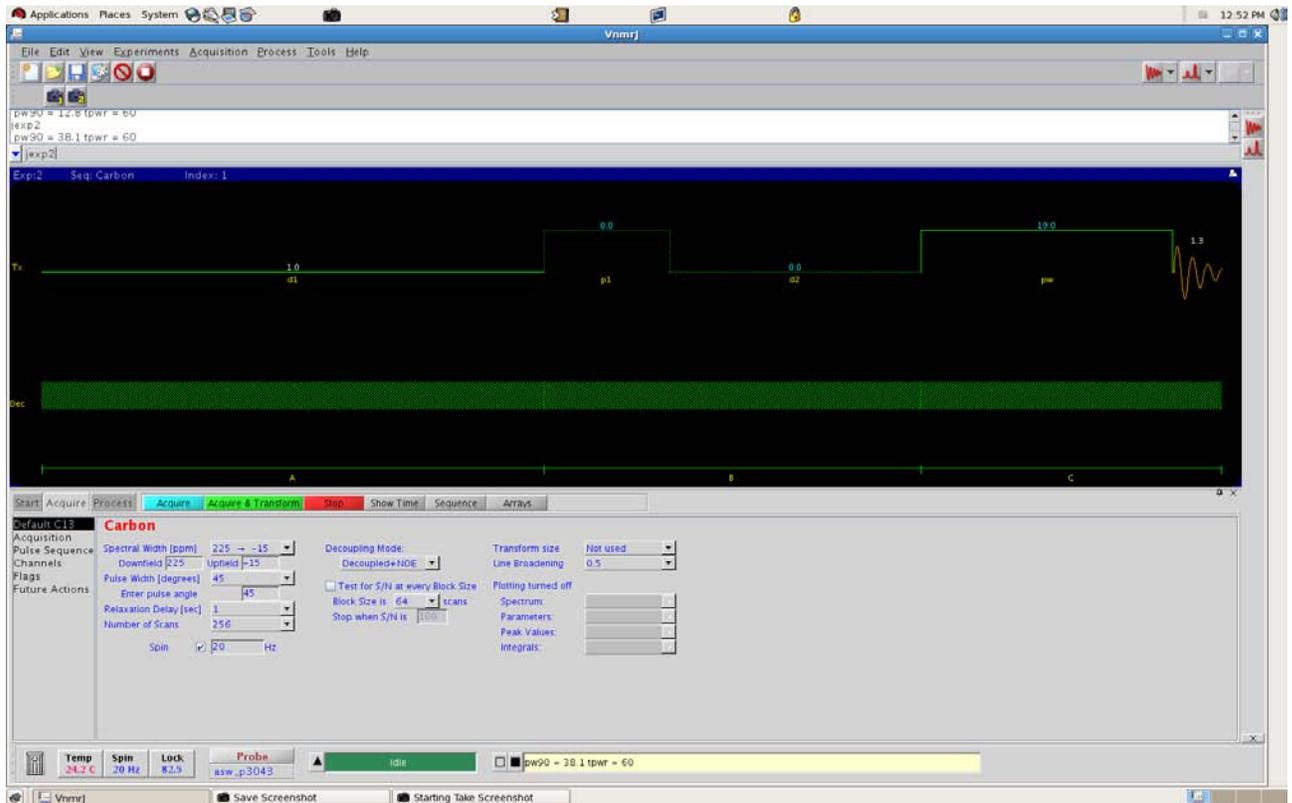
2) Another option, go to the tab Process/Plot, select the options and plot the spectrum.

3) through the command line: “pl plttext pscale pir page”

Running a carbon experiment.

1) change to experiment 2; type “jexp2” and then press <enter>.

2) select the experiment “carbon”



3) Select the **solvent** on tab Start/Standard.

4) type on the command line “ga”, then press <enter>. Or just click on <Acquire & Transform>.

5) save the file.

Once you are done, put the standard sample back in the magnet and lock it.

1) select the solvent (D₂O), then press <Find Z0>.

2) stop the spinning. On tab start/ spin/temp, press <spin off>.

3) close Vnmrj; select “File” on the upper left corner and then “Exit Vnmrj”.

4) log out from your account.

5) log in the log book.

Retreiving data from the spectrometer computer using WinSCP

0) Open the WinSCP program.

1) click on <NEW> .

2) Fill in the windows that pops up: host name: merc300.chem.utk.edu, user name: , and password:.....

3) click on <save>.

4) click <OK> on next window.

5) when trying to connect for the first time, a windows pops up. Just click on <yes>.

6) the right panel is the host computer, change the directory to vnmrsys/data.

7) download the data.

8) once you are done, diconnect from the host computer.