How to Acquire a Proton Spectrum

rev 6/10/08 jgb

Eject sample in magnet and turn on the air flow	e **↵Return** on the Gemini 400, push down the black button on the H-tower by the magnet
Insert your sample into the magnet and turn off the air flow	i **↵Return** on the Gemini 400, slowly pull up the black button on the H-tower by the magnet
Select a set of standard parameters	**Main Menu** **Setup** **H1,CDCl3** or **Nucleus, Solvent** for another combination su **↵Return**
Load a good set of shims	rts('best') su load='n' **↵Return**
Open the Lock & Shim window	**Acqi**
Find and optimize the Deuterium lock signal	**Lock** *-Turn the lock off* *-Increase the lock gain all the way* *-Increase the lock power until the signal is evident* *-Adjust Z0 until the signal is on-resonance* *-Turn the lock back on* *-Lower Lock power to less than 30* *-Lower Lock gain so intensity of lock signal is >20 and <80* *-Adjust the Lock phase for the highest intensity lock signal*
Go to the Shim Window	**Shim**
Shim the magnet	*-Adjust Z1C for the highest intensity lock signal*

	-Adjust Z2C for the highest intensity lock signal *-Readjust Z1C and Z2C until the best combination is found* *-Adjust Z1, Z2, Z3, and Z4 for the highest intensity lock signal* *-Iterate through Z1-Z4 until the highest lock signal intensity is found*
Set the number of transients to 1 and acquire a test spectrum	nt=1 ga **↵Return**
Display the spectrum	f aph vsadj full **↵Return**
Find the narrowest peak in the spectrum (typically the residual solvent signal) and put a cursor on each side of it	**Expand**
Place a cursor near the top of the peak	nl **↵Return**
Measure the line width at half-height	dres **↵Return**
Shim more if the line width is greater than 1 Hz or if the peak is asymmetric	**Shim**
Acquire a final spectrum with signal averaging if the shimming is acceptable	nt=16 ga **↵Return**
Associate text with the spectrum before saving it	text('*your text*') **↵Return**
Save the spectrum	svf('*your filename*') **↵Return**
Phase the spectrum	aph **↵Return**
Reference the spectrum: put a cursor on the peak to be referenced (e.g. chloroform peak)	nl rl(7.26p) **↵Return**
Display integration of the spectrum peaks, scale the peaks and integral, and clear old zero points	**Part Integral** cz f full vsadj isadj **↵Return**
Integrate individual peaks of your choice	**Resets** *-Click left mouse button once on each side of every peak you want to integrate* isadj **↵Return**
Normalize the integrals to a particular peak	*-Place cursor on known integral region (e.g. a peak that corresponds to 1 Proton)*

	Set Int 1.00 **↲Return**
Select the starting point and total width of the spectrum to be plotted (e.g. -0.5ppm to 10.5 ppm)	wp=11p sp=-.5p **↲Return**
Set the threshold for peak picking	**Th** *-Move the yellow threshold line up or down with the mouse to select only those peaks above the threshold*
Plot the spectrum and integral graphics	pl **↲Return**
Plot the scale	pscale **↲Return**
Plot the integral values	pir **↲Return**
Plot the peak frequencies (above the threshold)	ppf **↲Return**
Plot the text (units out, units up)	pltext(150,150) **↲Return**
Plot all the parameters	pap **↲Return**
Start plotting	page **↲Return**