

TUNING THE PROBE ON THE VARIAN VNMR5 500

August 25, 2016

1. You **must** tune the probe if:
 - you are running any sort of ^{13}C experiment
 - you are running any 2D experiment
2. You **may** tune the probe if you are running only a simple ^1H . Tuning the probe gives you better sensitivity, and it also protects the probe from too much power. This is especially important with fast scans or with ^{13}C acquisition.
3. Type `trtune`
4. Check that the top two channels listed are ^1H and ^{13}C .
5. Click on “Start Probe Tune”. If the display does not show two curves with dips in them, like in Figure 1, then type `ff`
6. The goal of tuning is to adjust each of the two dips so that is it centred on the green line, and is as deep as possible (nearly touching the bottom of the window). To accomplish this, work underneath the magnet and:
 - i. use the red tuning rod for ^1H , and the green for ^{13}C . Each rod contains two parts
 - ii. rotate the upper (textured) part of each rod to move the dip from side to side (this is “tuning”)
 - iii. rotate the lower (smooth) part of each rod to move the dip up and down (this is “matching”): it will also move side to side; use the tune part of the rod (the upper part) to correct this
7. After both dips are centred in the window, like in Figure 2, click on “Stop Probe Tune” and wait a few seconds
8. After a few seconds, click on Quit

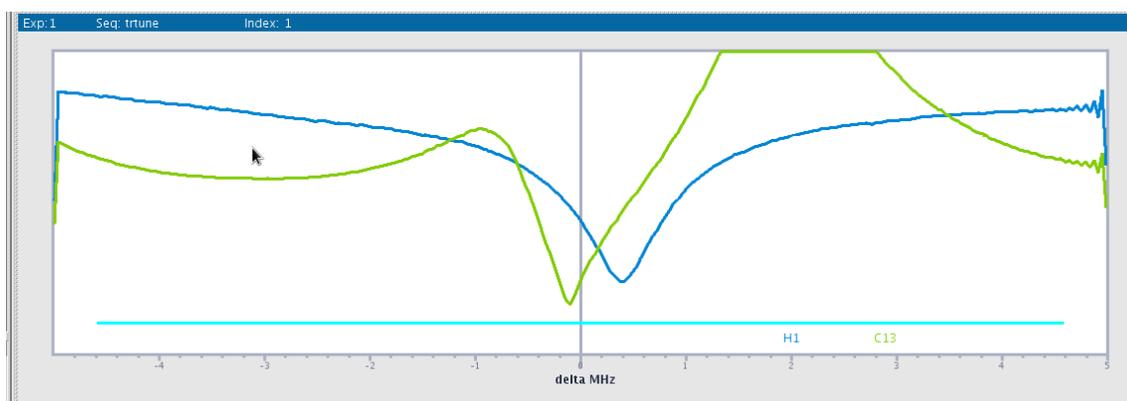


Figure 1. Trtune display for untuned probe. Proton curve is blue, carbon is green.

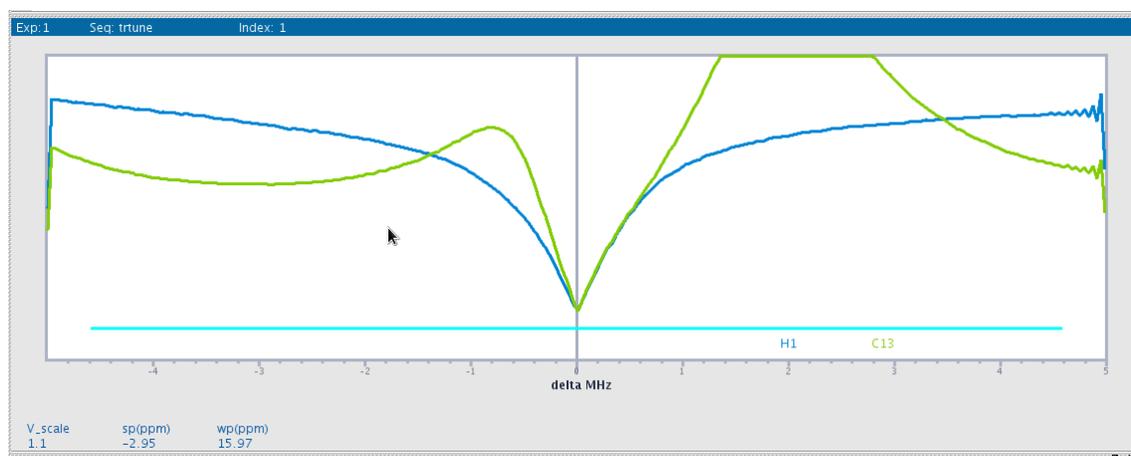


Figure 2. Trtune display for tuned probe: the dips of both curves are in the centre and are deep (nearly touch the bottom).