



# the EASY WAY

the

# NMR



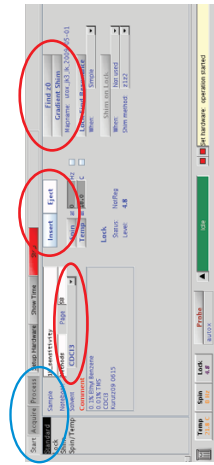
# DTO

- Command line interface
- Manual lock
- Manual shim

# NEW

- Automatic locking
- Automatic shimming
- Automatic processing and referencing
- Graphical interface
- Button- & menu-driven

☛ Select your solvent, and **GO!**



Josh Kurutz, Ph.D.      Yiyang Wu, Ph.D.  
 Senior Scientist for NMR    NMR Specialist for NMR  
 jkurutz@northwestern.edu    y-wu1@northwestern.edu  
 847-467-1681      847-491-7080

Integrated Molecular Structure Education and Research Center  
 Chemistry Department, Northwestern University  
 2148 Sheridan Rd, Evanston, IL 60208-3113

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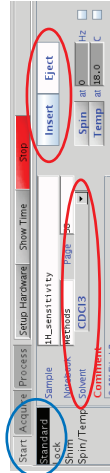
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☛ For running updates on new capabilities, tips, and helpful mini-zines please visit our new blog:

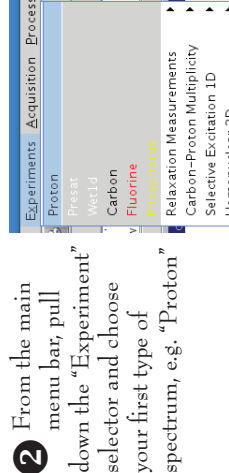
☛ This is the first in a series of mini-zines about special topics in chemical NMR

# IMSERC NMR

# Starts



☛ In the **Start/Standard** panel, click the **Eject** button, swap samples, click the **Insert** button

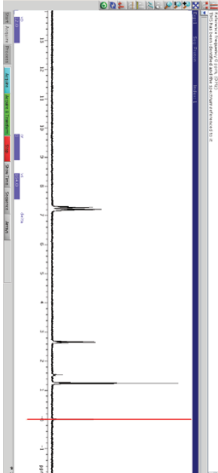


☛ Pull down the solvent selector and choose your solvent. *(This is the key to succeeding with the automated setup!)*

# Troubleshooting

- Make sure your solvent choice is correct
- If lock level is <30 and shims are poor, resort to the command line and type **Ts(cdc13)** to retrieve standard shims, then click "Grabbed Shim" button again.
- Spectrum quality is degraded by insufficient solution (<0.5mL), particulates, concentrated acid, low-quality and scratched tubes, etc.
- Mixed solvents may need to be referenced manually
- If problems persist, please contact Yiyang or Josh

☛ Save your data. Click the "Save" icon, choose a location, and give your file a name.



# Finished!

# Lock, Shim, Lock

☛ Click the "Find z0" button to establish lock



Note: the lock level will bounce around before re-establishing lock. If lock is not established, check your solvent selection. If that's ok and you still aren't locked, proceed to gradient shimming anyway.

☛ Click the "Gradient Shim" button to shim

Your lock signal should drop to zero, then you should see profiles such as these appear on your screen. Each round of shim adjustment takes ~30 sec to perform, and most samples can be shimmed in 1 to 3 rounds.

When complete, you should see the "Gradient Autosimming on Z done!" message at the bottom of the window. If lock is not restored after gradient shimming, click "Find z0" again. Using this method of locking and shimming should result in a lock level between ~60 and 80.

**!No further lock adjustment is necessary!**

☛ From the top menu bar, open "Tools...Auto Tune Probe"

☛ In the "Quick Tune" part of the Tune Probe panel, click your nucleus. If you need a different nucleus, e.g., Pt195, type its name in the "Nucleus" box in the "Advanced Tune" area, select a Tune Criterion from its pull-down, and click, "Tune to Criterion". You may observe blinking lights and spinning knobs on the Proton units. The process should finish with a message like this:

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# Acquire

# Automate (M400 only)

M400 is our only Varian spectrometer equipped with a probe capable of direct observation of diverse nuclei AND automated tuning.

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☛ From the top menu bar, open "Tools...Auto Tune Probe"

☛ Tuning done. ok - tuned to 400.157 MHz, with match at within 3.7 percent of optimum

