VI. Trouble-Shooting

- **wrong parameters** – make sure **probe** parameter matches probe in magnet
- **sample won't spin** – if probe has been changed, find TA to try reseating spin collar tube: push probe up, then at top of magnet, push down the aluminum tube guiding sample in
  – check that sample tube is not inserted too far into spin collar
  – check that VT air is not turned up too high
- **sample won't eject** – try turning the VT air flow up to (turn it back down after inserting)
  – try "air" hook up (rather than N_2 gas which has lower pressure)
  – check that air pressure (gauge in southeast corner) is turned up to mark
- **sample won't shim** – read in proper shim file (use UWMACROS LOADSHIMS)
  – check that you have enough solvent (≥0.6 ml) and are 67mm down on depth gauge, and centered in rf region
  – check that lock power is not too high, and that lock phase is correctly adjusted
  – let magnet warm for quite a while (up to 1h) after a cold experiment
  – if previous student didn't stop early enough, you will need to adjust especially the lock phase fairly often during the warmup (and wack the previous person as hard as possible with a wet noodle!), and also reshim somewhat over 30 min to 1 hour
- **command doesn't work** – hit **return key** and try again; some mistypes carry over to next line
- **S/N seems poor** – most likely, an attenuator has been left in line at the output of the preamp leading back to the ADC; if your sample is not very concentrated, remove this attenuator and adjust the **gain** setting
  – check pw90 (at least on the observe side); if unusually long, check with TA or facility staff
- **spectrum on screen is only an inch long or so**
  – type **full** to reset plot window (needed after **dssh** command)
- **says exp locked** – enter the command **unlock(#)** where # is the exp number that's locked, or delete the file **~/vnmrsys/lock_#.primary** in unix
- **won't let jexp#** – probably have not created the experiment (see WORKSPACE)
  explib will list all experiment areas
  cexp(#) will create experiment area #
  delexp(#) will delete experiment area # (saves disk space)

- **cannot get good pw90 calibration**
  - check that probe is properly tuned
  - check that **tpwr** is set correctly (or **pwxlvl** for decoupler calibration)
  - check that external attenuator is *not* placed in ^{1}H observe position
- **waits a long time before acquisition starts** – have one of the following flags set

spin ≠ 0	if spin is set to a number, the spectrometer will "regulate" the spinning, taking time before acquisition to make sure the spinning is regulated; set **spin=0** at the vnmr prompt, and set spinning in the *acqi* window
gain='n'	for this setting, spectrometer will perform an autogain; recommend setting the gain to a specific value manually and not using autogain
wshim='a'	autoshimming will occur; should not be used except possibly between kinetic runs (simply too inefficient and wastes spectrometer time)

  - use the **flagsoff** macro to set all the flags above to their appropriate values

- **No acqi (lock-n-shim) window:** Type **acqi** in vnmr command line

- **Can't Connect to spectrometer**
  - Pressing connect button on ***acqi*** window doesn't work:
    Try in UNIX terminal window: **su acqproc** twice (once to kill, once to restart); this should re-enable connect to ***acqi***

- **FIFO Underflow Error:** Check sweep width; an excessive sweep width (>80,000 Hz) can show this error, try reducing sw and re-acquiring.

- **loc not defined:** Type the macro **fixloc** to correct.