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 N₂ 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 \texttt{tpwr} is set correctly (or \texttt{pwxlvl} for decoupler calibration)
  – check that external attenuator is not placed in $^1H$ observe position

• **waits a long time before acquisition starts** – have one of the following flags set
  \texttt{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 \texttt{spin=0} at the vnmr prompt, and set spinning in the acqi window
  \texttt{gain='n'}
  for this setting, spectrometer will perform an autogain; recommend setting the gain to a specific value manually and not using autogain
  \texttt{wshim='a'}
  autoshimming will occur; should not be used except possibly between kinetic runs (simply too inefficient and wastes spectrometer time)

  – use the \texttt{flagsoff} macro to set all the flags above to their appropriate values

• **No acqi (lock-n-shim) window:** Type \texttt{acqi} in vnmr command line

• **Can’t Connect to spectrometer**
  – Pressing connect button on \texttt{acqi} window doesn’t work:
    Try in UNIX terminal window: \texttt{su acqproc} twice (once to kill, once to restart); this should re-enable connect to \texttt{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 \texttt{fixloc} to correct.