Common Issues and Troubleshooting

Spinning

- Spin light won't stop blinking – *It is not going to. A problem with the sensor causes this to happen. As long as the actual reading is stable, continue with the run. If the reading is not stable, pull your sample, re-load it, try again. If it is not stable the second time, do not continue. Inform Chris Kojiro and your GSI of the problem*
- Sample won't stop spinning, but the spin light is off – *The air flow doesn't turn off right away. On the left-hand side of the console, just underneath the tabletop, there's a small black button. Press and hold that button. The sample should stop spinning.*

Locking

- Sample won't lock -- *lots of potential reasons*
  - *Check the lock phase, gain, power, and field values and make sure you use the suggested values as a starting point – make small adjustments with the knob when making changes. You should see the line "jump" as you near the correct field.*
  - *Check to make sure the Fine* ***button is on***
  - *Check your sample. The tube should be filled with approximately 3-5cm(up top it says 3cm) of sample and there should be no visible solids. If your sample meets those conditions, but it still won't lock, remove some of the sample and add more solvent. It's possible that there is simply too little deuterium to obtain a lock.*
  - *Turn up the lock gain and power. Make sure that when the* ***Field*** *button alone is engaged, the signal looks like two sine waves, one increasing in intensity, one diminishing. They should meet in the middle of the PCI window. If they don't, adjust the field until they do. The two waves should be reflections of each other. If they signal is asymmetric, adjust the lock phase slightly to maximize symmetry. Once it is both centered and symmetric, push* ***Field,*** *then* ***Lock*** *and attempt the locking procedure again.*
  - *Still won't work? Call the GSI.*

Signal acquisition/Spectral processing

- *If you press zg and nothing happens, the computer and the NMR may not be communicating. Press the Hammer button in the top left of the toolbar. Then try again.*
- *Sometimes logging out of the software and back in again will also fix this problem.*

- No signal – *a few possible reasons*
  - *Is the lock holding through the run? If not, see the above section. A drifting lock will cause poor peak shape and potentially no visible signal*
  - *Check the receiver gain (rg) value. If it is not a value of* 2^n*, you may not see a signal. Set rg to 2 and try again.*
  - *Did you abort a run prior to this acquisition? If so, set the number of scans to 4, the rg to 2, hit zg, and let the run go to completion. Sometimes after a run has been aborted, the receiver does not seem to gate correctly. Doing a quick run seems to reset the system.*
  - *Load the default shim setting file and re-shim the instrument. Be sure the* ***Fine*** *button is engaged. A poor set of shims can ruin your signal.*

- *Increase the sample concentration. If you don't have enough nuclei present, you won't get a signal.*

- No TMS peak, uneven baseline – *Probably a function of a saturated receiver. If the FID appears to be rectangular at the beginning (on the left side) instead of a clean, exponential decay, the receiver is saturated. Decrease the receiver gain (remember the 2^n rule) and try again. See the directions for more information about the receiver gain. It wouldn't hurt to re-shim either….*

- Poor peak shape, difficulty phasing – *Shimming, shimming, shimming. Go through the shim procedure very slowly and carefully. Make sure you have maximized the signal. Be sure the* ***Fine*** *button is on while adjusting the shims.*

NEVER, NEVER, ABSOLUTELY NEVER turn off the ORANGE button on the front of the NMR console!!!!!!!!!!!!!

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