**Optimization of the famous "mixing time" = d8 in NOESY experiments. This is done with the "go setup" module which is started with the gs command in the command line.**

1. Run a regular 1H experiment with zg as pulse programme. Phase manually and save the phasing.

2. Change NS to 1, DS to 0, TD to16K , D1 to 30s , pulse program to t1ir1d (one dimensional program with a 180 degree pulse a delay and a 90 degree pulse followed by acquisition.
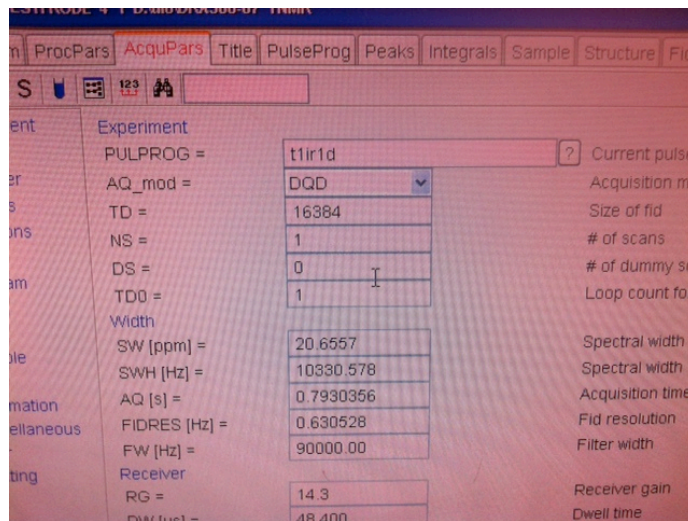

Change d7 to for instance 500 ms as a starting value. A d7 value here is to be put into the parameter d8 in noesy experiments.
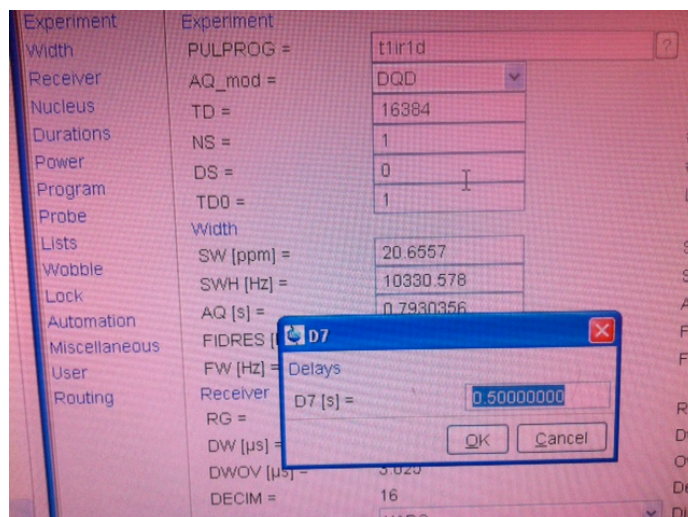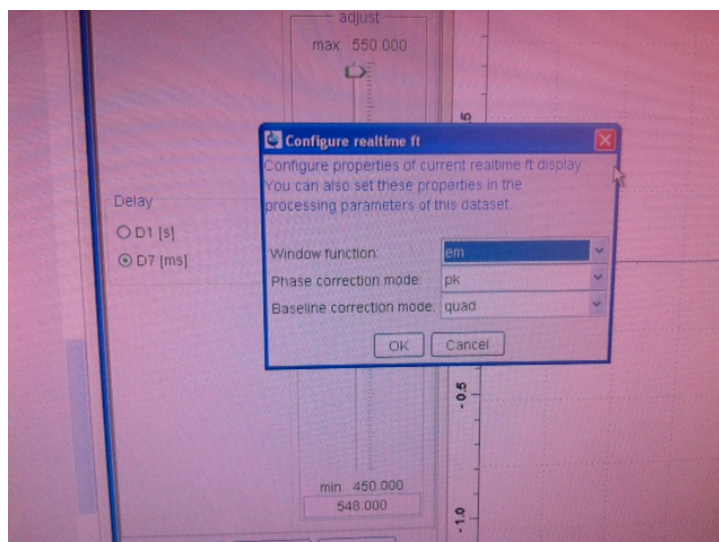

3. Type gs The go setup program starts immediately based on the under laying experiment and the following wind shows up.
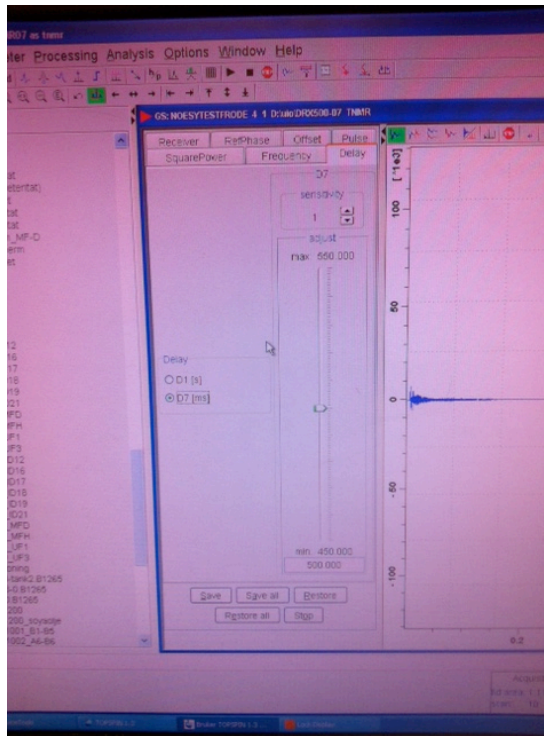
4. Click on the delay button and change from D1 to D7.   Be aware of that the pulses are running constantly, but with a delay of 30 seconds (D1).

5. Check some of the gs processing parameters by clicking on the indicated button.
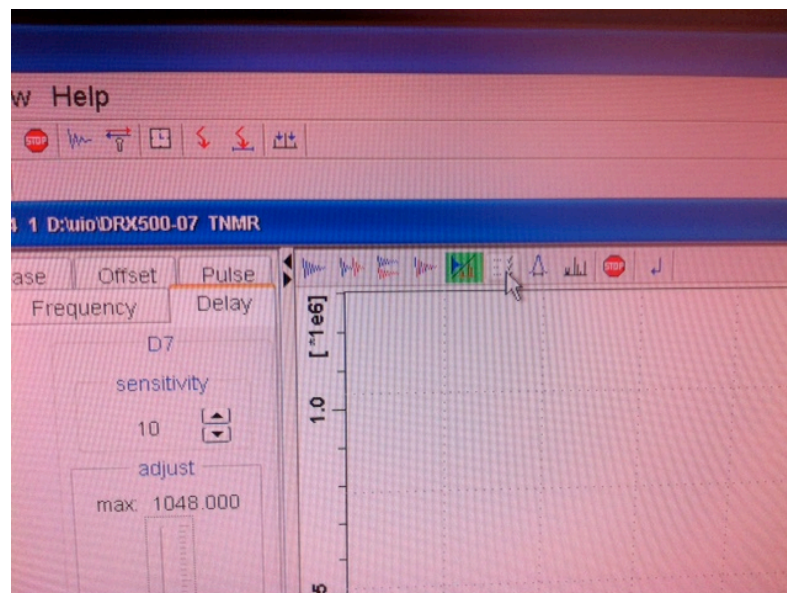
6. Then put in the following:

7. Select the button that allows you to see the spectrum each time it is acquired (hint: it is green in Topspin 1.3 and maybe the same in topspin2.1).

8. The following picture shows you a interactive display with some peaks negative and some positive. What does that mean? Observe the slider on the left. You will change d7 there by moving the slider up or down. Observe also that the sensitivity can be changed. You can also change d7 in the command line.
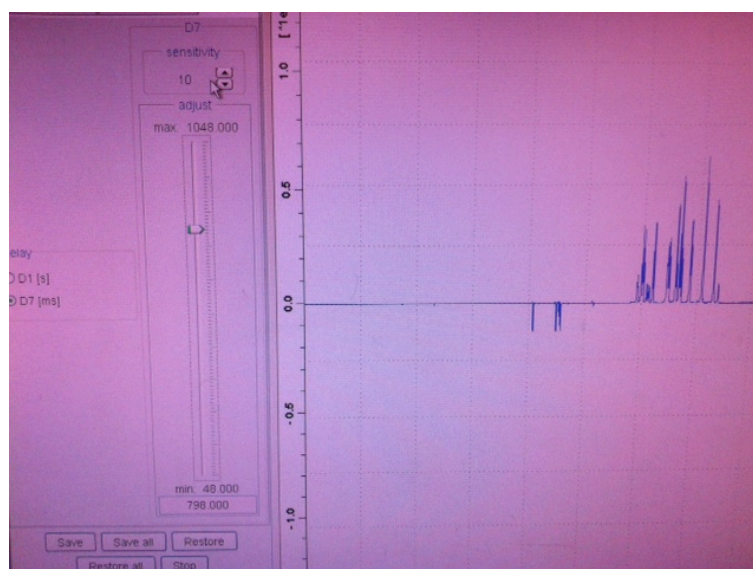
9. Use a formula containing T1, tzero (what is that?) and ln2 to roughly calculate the T1 values of the different resonances. If you don't remember this formula look it up in a book. Are the aromatic Hs or the aliphatic Hs relaxing fastest?

10. What shall you do when different Hs have different T1s? What d8 value shall you enter in the various NOESY experiments?