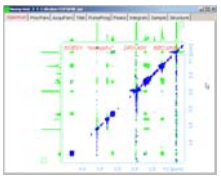
^{1}H-^{1}H COSY Setup Bruker DPX-300 215 & Av-300 83 & DRX-400 83

on the HP Windows-XP pc computers {83 & 215} Bruker TopSpin © vers. 1.3

{This handout does not utilize Gradients, so can be run on any Bruker Avance System}

Handout is Still under Construction ######### Handout is Still under Construction

- Verify that previous acquisitions have finished [halt]
- Change samples
- Lock [lock]
- Browse to read in **1H** file [browse]
- Create n**ew** *datasetname* [new]
- **DRX-400:** Tune the ^{1}H coil of the Probe [wobb]

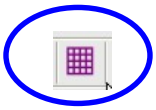


- Shim…… with sample Spinning
- **ii**
- **rga**
- **zg** acquire a one-scan ^{1}H

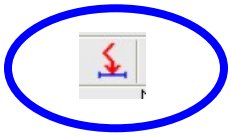
Refer to Handout **"Acquire ^{1}H in preparation for 2D in TopSpin"** for detailed steps for instructions below.

- Expand to desired spectral **'Observe'** range
- Click on **'Grid'** button for ease of locating the Spectrum's center

*{we do not want O1 **center** to be on top of a peak}*. With the shift-sideways button, avoid having peak at the center point }



- Click on "**SW-SFO1**" button to define new optimized Spectral Window for 2D……..*{Set TD to 32k}*



td 32k

- Acquire a good S/N ^{1}H Spectra to use for Projection along 2D axis.

zg

- Turn **OFF** Spinning

Spin = OFF

- Create new **EXPNO 2**
- Do a ^{1}H **Pulse Calibration**

- In **EXPNO 2**
- **NS = 1 DS = 0 PULPROG = zg**
- **zg efp** Touch up phase if needed.
- **P1 = 20**
- **zg;efp** Peaks should be negative phase now
- Adjust **P1** until peaks are at the 360-degree null ~29$_{usec}$ @ PL1 = -3 dB

- Input **P0** = **P1** = *90 degree pulse* { ¼ 360-degree null }
- Input **P2** = *180 degree pulse* { ½ 360-degree null }
- Input **D1** = **4** *sec*

Spin = OFF

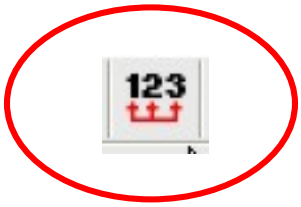
^{1}H-^{1}H COSY Setup Continued……..

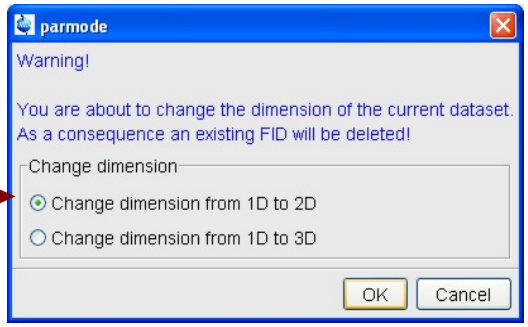
Spin = OFF

set cosy params from 1D

PULPROG = cosyqf
TD = 4k *{AQ ~= 0.3 to 0.5$_{sec}$}*
NS = 4, 8, **16,** multiples of 16
DS = 16
Set **RG** to ½ the value from **rga** in EXPNO 1

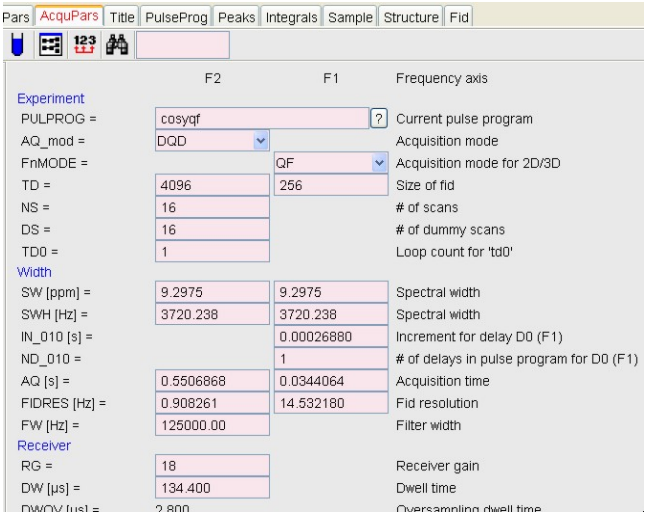
Same as **eda** *display in XwinNMR*





PULPROG = cosyqf

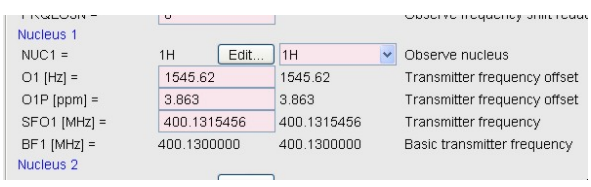
FnMODE = QF



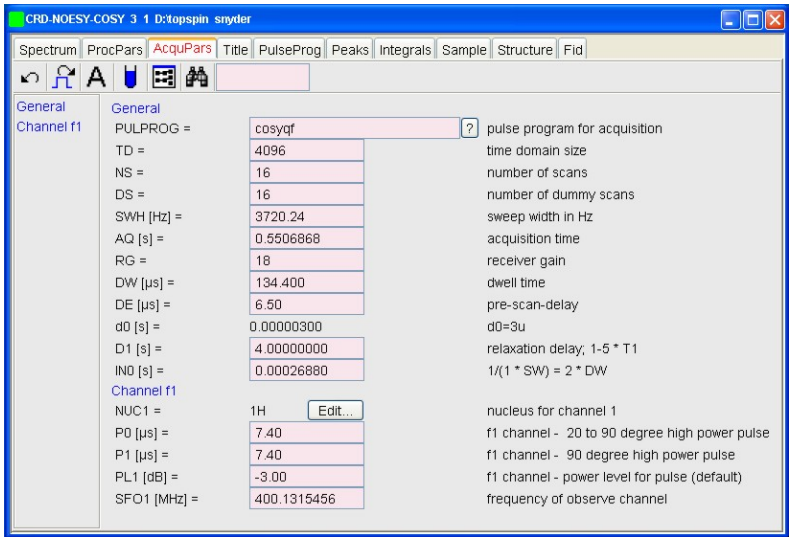
PULPROG = cosyqf
FnMODE = QF
TD {F2} = 4096 or 2048
TD {F1} = 256 *{maybe 300, 360, 400, 512}*
NS = 2, 4, **8, 16,**
DS = 16

ND_010 = 1
IN_010 = 2 x DW usec

Scroll-down to check….. **NUC1 = 1H = 1H**



^{1}H-^{1}H COSY Setup Setup Continued……..



Same as **ased** *display in XwinNMR*

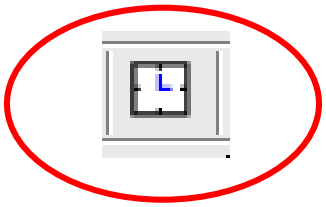
COSY:

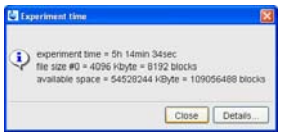
16 scans x 256 increments = 5 hrs 14 min.

8 scans x 256 increments = 2 hrs 37 min.

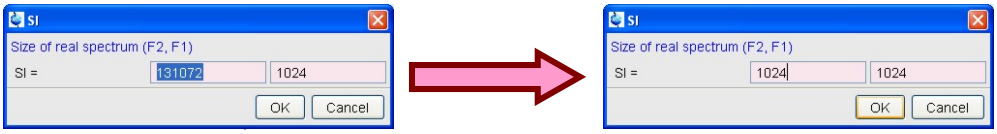
4 scans x 256 increments = 1 hrs 20 min.

Check **expt** time

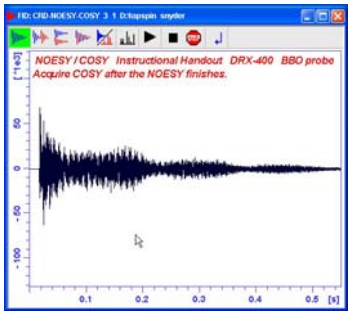




si



zg



COSY FID

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