* **67088\_screenshot\_1.ogv**
* 2.1.2 (The Topspin version is being adjusted) **00:00 - 00:30**
* **67088\_screenshot\_2.ogv**
  + 2.2.1 (NMR-shaped pulses being downloaded and stored in the directory. Adjustment of Topspin version for the NMR-shaped pulses.) **00:00 - 01:02**
* **67088\_screenshot\_3.ogv**
  + 2.2.1 (Calibration: spectrometer: temperature: lift the methanol-d4 sample) **00:00 - 00:04**
* **67088\_screenshot\_4.ogv**
  + 2.2.1 (Calibration: spectrometer: temperature: lock the methanol-d4 sample) **00:00 - 00:36**
* **67088\_screenshot\_5.ogv**
  + 2.2.1 (Calibration: spectrometer: temperature: matching and Tuning of the methanol-d4 sample) **00:00 - 00:40**
* **67088\_screenshot\_6.ogv**
  + 2.2.1 (Calibration: spectrometer: temperature: shimming of the methanol-d4 sample) **00:00 - 01:50**
* **67088\_screenshot\_7.ogv**
  + 2.2.1 (Calibration: spectrometer: temperature: 1H 1D of the methanol-d4 sample)

**00:00 - 00:26**

* **67088\_screenshot\_8.ogv**
  + 2.2.1 (Calibration: spectrometer: temperature: peak picking in the 1H 1D of the methanol-d4 sample) **00:00 - 00:27**
* **67088\_screenshot\_9.ogv**
  + 2.2.1 (Calibration: spectrometer: temperature: check the temperature with the NMR thermometer and set the new temperature) **00:00 - 00:45**
* **67088\_screenshot\_10.ogv**
  + 2.2.1 (Calibration: spectrometer: temperature: new 1H 1D of methanol-d4 sample and peak picking) **00:00 - 00:35**
* **67088\_screenshot\_11.ogv**
  + 2.2.1 (Calibration: spectrometer: temperature: proof of the temperature with the NMR thermometer) **00:00 - 00:16**
* **67088\_screenshot\_12.ogv**
  + 2.2.1 (Calibration: sample: lift the protein sample) **00:00 - 00:04**
* **67088\_screenshot\_13.ogv**
  + 2.2.1 (Calibration: spectrometer: lock) **00:00 - 00:40**
* **67088\_screenshot\_14.ogv**
  + 2.2.1 (Calibration: spectrometer: copy HSQC for matching and tuning)

**00:00 - 00:28**

* **67088\_screenshot\_15.ogv**
  + 2.2.1 (Calibration: spectrometer: matching and tuning) **00:00 - 02:58**
* **67088\_screenshot\_16.ogv**
  + 2.2.1 (Calibration: spectrometer: check the matching and tuning) **00:00 - 00:25**
* **67088\_screenshot\_17.ogv**
  + 2.2.1 (Calibration: spectrometer: automated shimming) **00:00 - 01:23**
* **67088\_screenshot\_18.ogv**
  + 2.2.1 (Calibration: 90° (1H) pulse length: set up and acquisition of an 1H 1D of the protein sample) **00:00 - 00:50**
* **67088\_screenshot\_19.ogv**
  + 2.2.1 (Calibration: 90° (1H) pulse length: calibration of the 1H 90° pulse)

**00:00 - 01:03**

* **67088\_screenshot\_20.ogv**
  + 2.2.1 (Calibration: Carrier frequency o1: calibration of the carrier frequency o1)

**00:00 - 04:03** (A time-lapse would shorten the video)

* **67088\_screenshot\_21.ogv**
  + 2.2.1 (Calibration: 90° (15N) pulse length: read the pulse sequence and parameters) **00:00 - 01:05**
* **67088\_screenshot\_22.ogv**
  + 2.2.1 (Calibration: 90° (15N) pulse length: run the HSQC and edit the pulse sequence of the first FID) **00:00 - 01:58**
* **67088\_screenshot\_23.ogv**
  + 2.2.1 (Calibration: 90° (15N) pulse length: calibration of the 90° 15N pulse)

**00:03 - 02:30**

* **67088\_screenshot\_24.ogv**
  + 2.2.1 (Calibration: HSQC experiment: set up of the spectral widths and spectral resolution, zg of the HSQC) **00:00 - 00:30**
* **67088\_screenshot\_25.ogv**
  + 2.2.1 (Calibration: HSQC experiment: processing of the HSQC to check the spectral widths and spectral resolution) **00:00 - 00:37**
* **67088\_screenshot\_26.ogv**
  + 2.3.1 (Copy the HSQC to a new experiment) **00:00 - 00:10**
  + 2.4.1 (Using ased to open the pulse sequence parameters) **00:10 - 00:15**
  + 2.4.2 (Selection of the pulse program) **00:15 - 00:32**
  + 2.4.3 (Confirmation of the pulse program) **00:32 - 00:55**
  + Remove video after **00:55**
* **67088\_screenshot\_27.ogv**
  + (Inserting gradient shapes) **00:00 – 00:33**
* **67088\_screenshot\_28.ogv**
  + (Insert the vplist) **00:00 – 01:00**
  + Remove video after **01:00**
* **67088\_screenshot\_29.ogv**
  + 2.5.1 (Type in ased and enter missing gradient strengths and strengths)

**00:00 – 01:12**

* + 2.6.1 (Enter the loop counter l3) **01:12 – 01:23**
  + 2.6.2 (Enter the loop counter l6) **01:23 – 01:30**
  + (Insert number of scans) **01:30 – 01:31**
  + 2.7.1 (Set SP8 to the TanhTan\_half.nl) **01:31 – 01:44**
  + 2.7.2 (Set SP9 to the TanhTan\_2nd.nl) **01:44 – 01:59**
  + 2.7.3 (Set p8 to 3000u) **01:59 – 02:10**
  + (Set decoupling PCPD3) **02:10 – 02:28**
  + 2.8.1 (Set the delay D1 to 2 s) **02:28 – 02:38**
  + 2.9.1 (Set the dummy scans) **02:38 – 02:43**
  + 2.9.2 (Set the number of scans) **02:38 – 02:43**
  + 2.10.1 (Set the o1 carrier frequency) **02:43 – 02:47**
  + 2.10.2 (Set the o2 and o3) 02:47 – 02:57
  + 2.11.1 (Set p7 to the calibrated 90° 15N hard pulse) **02:57 – 03:04**
  + 2.11.2 (Set the 15N power level to PLW7) **03:04 – 03:17**
  + 2.12.1 (Set p1 and p19) **03:04 – 03:23**
  + 2.13.1 (Calculate and set the TD in 15N) **03:23 – 03:35**
  + 2.14.1 (Set the IBURP shape to SP5 and stet p15 to 2000u) **03:35 – 04:06**
* **67088\_screenshot\_30.ogv**
  + 2.14.2 (Open the shape tool display) **00:00 – 00:05**
  + 2.15.1 (Click the Start NMR Simulation button) **00:05 – 00:08**
  + 2.15.2 (Confirm shaped pulse length and rotation angle) **00:08 – 00:11**
  + 2.16.1 (Check the excitation range) **00:11 – 01:30**
  + 2.16.2 (Set P15 to the selected length) **01:30 – 01:45**
  + 2.17.1 (Set the SPOFFS5) **01:45 – 01:52**
* **67088\_screenshot\_31.ogv**
  + 2.18.1 (Open Bruker shape tool and start a NMR simulation) **00:00 – 00:04**
  + 2.18.2 (Set correct IBURP length and note the corresponding 90° square pulse) **00:04 – 00:10**
  + 2.19.1 (Use the calcpowlev command) **00:10 – 00:36**
  + 2.19.2 (Calculate SPW5) **00:36 – 00:49**
* **67088\_screenshot\_32.ogv**
  + 2.20.1 (Calculation of corresponding 90° 15n pulse length of the spin lock) **00:00 – 00:27**
  + 2.21.2 (Use calcpowlev) **00:00 – 00:27**
  + 2.21.2 (Calculate PLW8) **00:00 – 00:39**
  + 2.22.1 (Copy PLW8 to SPW8 and SPW9) **00:39 – 00:48**
* **67088\_screenshot\_33.ogv**
  + 2.23.1 (calcpowlev command to calculate the power difference btw PCPD3 and P7) **00:00 – 00:16**
  + 2.23.2 (Already set in 67088\_screenshot\_29.ogv)
  + 2.24.1 (Set PLW31) **00:16 – 00:27**
* **67088\_screenshot\_34.ogv**
  + 2.25.1 (Add #define TEMP\_ to the pulse sequence) **00:00 – 00:15**
  + 2.26.2 (Add #define LABEL\_CN to the pulse sequence) **00:00 – 00:15**
  + 2.25.2 (Set P18 to the maximum spin lock duration) **00:15 – 00:35**
  + 2.26.2 (Set P4) **00:35 – 00:45**
  + 2.26.3 (Calculate the power level difference between P4 and the 13C hard pulse) **00:45 – 01:00**
  + 2.26.4 (Calculate PLW4 and copy to PLW2) **01:00 – 01:17**
* **67088\_screenshot\_35.ogv**
  + 2.27 (Type zg to start the R1p experiment and run the first eight FIDs)

**00:00 – 01:30**

* **67088\_screenshot\_36.ogv**
  + 2.27.1 (FIDs processed with rser\*\* command) **00:00 – 01:35**
  + 2.27.2 (vplist entries chosen based on intensity comparison) **01:35 - 02:08**
* **67088\_screenshot\_37.ogv**
  + 2.29.1 (Type rga to calculate the receiver gain) **00:00 – 00:14**
  + 2.30.1 (Type zg to start the test run) **00:14 – 00:35**
  + 2.30.2 (Check water suppression for each delay) **00:35 – 02:24**
  + 2.30.3 (Check increment 9 for signal accuracy) **02:24 – 02:38**

Bonus screenshots:

* **67088\_screenshot\_38.ogv**
  + (R1 experiment set up) **00:00 – 02:00**
  + (Show R1 pulse sequence parameter) **02:00 – 02:20**
  + (Type zg to start R1 experiment) **02:20 – 02:48**
* **67088\_screenshot\_39.ogv**
  + (FIDs processed with rser\*\*) **00:00 – 01:35**
* **67088\_screenshot\_40.ogv**
  + (hetNOE experiment set up) **00:00 – 01:33**
  + (Type zg to start) **01:33 – 02:12**
* **67088\_screenshot\_41.ogv**
  + (FIDs processed with rser\*\*) **00:00 – 00:42**
* **67088\_screenshot\_42.ogv**
  + (Scrolling all pulse sequence parameters of the R1p experiment) **00:00 – 00:48**