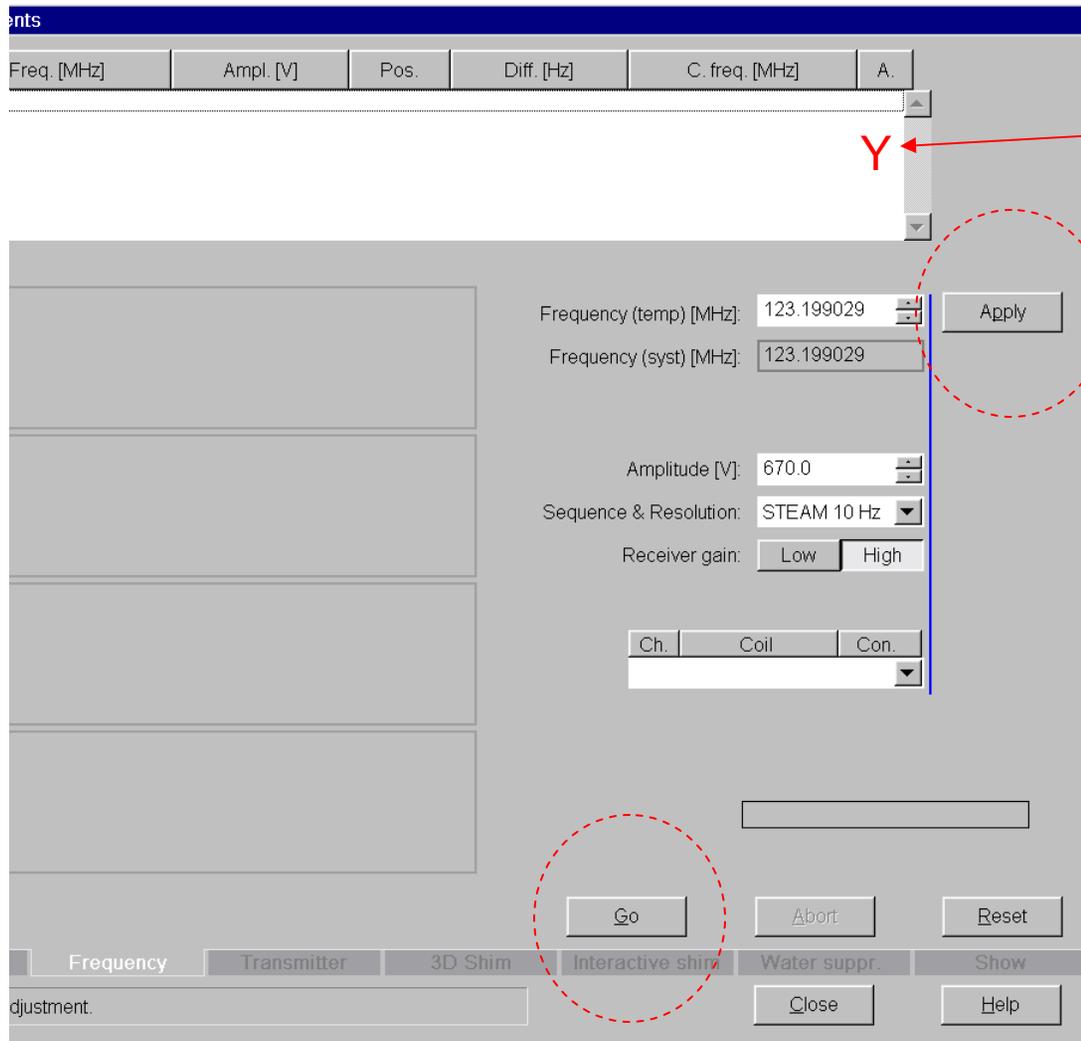# Semi-Automatic Adjustment procedure (Draft!)

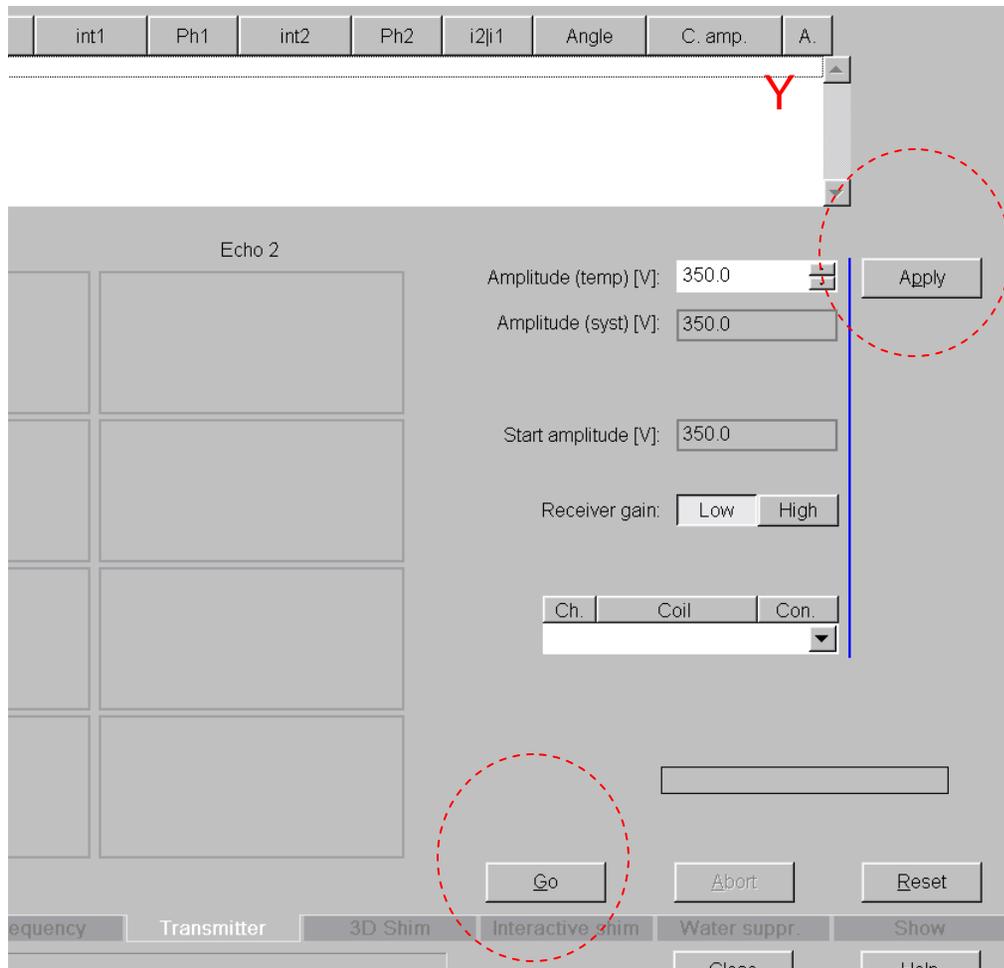## Imaging Research Center,

UCD

Brief Instructions

- The very presence of the head in the magnet bore disturbs the homogeneity of the B0 field across of the region of interest (in this case the head itself).
- The system has built in shim coils which create compensatory B0 fields. Adjusting the currents through those coils (labeled X, Y, Z, XY, XZ, YZ, Z2, etc.) can be done manually, automatically, or using a combination of manual and automatic procedure.

- Here there is described one of the possible Semi-Automatic Adjustment procedure meant to **converge every time**. (for sure there are better procedures, this is safe and not that bad)

- With the sequence *open for prescription*
- 1.   Open: Options -> Adjustments
- 2.   Frequency adjustment: press Go until a 'Y' is obtained in the results window. Then press Apply.
- 3.   Transmitter adjustment: press Go until a 'Y' is obtained (usually 4-5 times) in the results window. Then press Apply.
- 4.   Automatic Shim. Make sure that the Standard is selected. Repeat three times the sequence of operations
  - a. Measure
  - b. Calculate
  - c. Apply
- 5. Close Adjustment Window and run the sequence
  - (since the system knows that the shim was modified, it will auto adjust the frequency, there is no need to run it manually again)
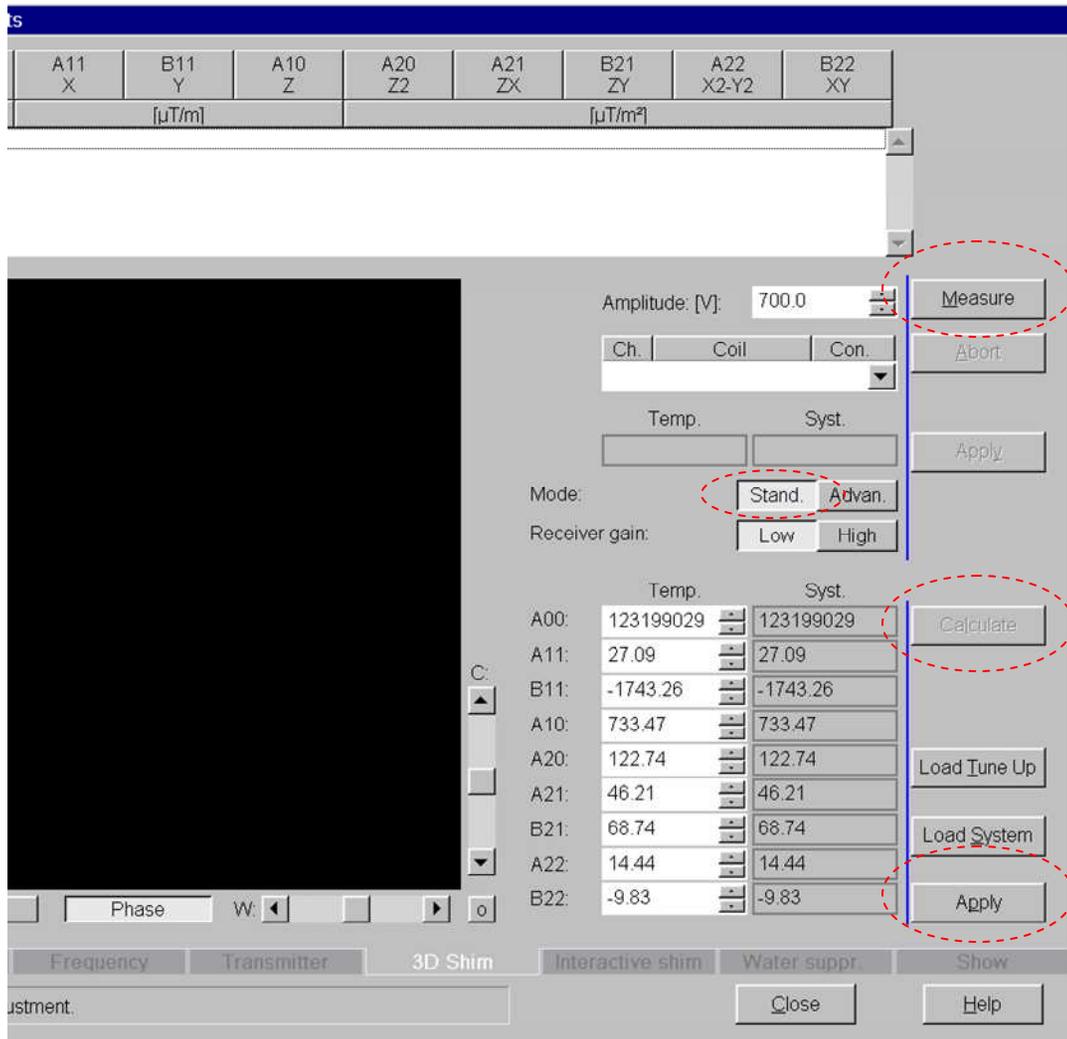
Frequency adjustment

- **press Go**
- **until a 'Y' is obtained in the results window.**
- **Then press Apply**

Transcripter adjustment

| int1 | Ph1 | int2 | Ph2 | i2|i1 | Angle | C. amp. | A. |

Y

Echo 2

Amplitude (temp) [V]: 350.0   Apply

Amplitude (syst) [V]: 350.0

Start amplitude [V]: 350.0

Receiver gain: Low | High

Ch. | Coil | Con.

Go   Abort   Reset

equency | Transmitter | 3D Shim | Interactive shim | Water suppr. | Show

Close   Help

- **press Go**

- **until a 'Y' is obtained (usually 4-5 times)**
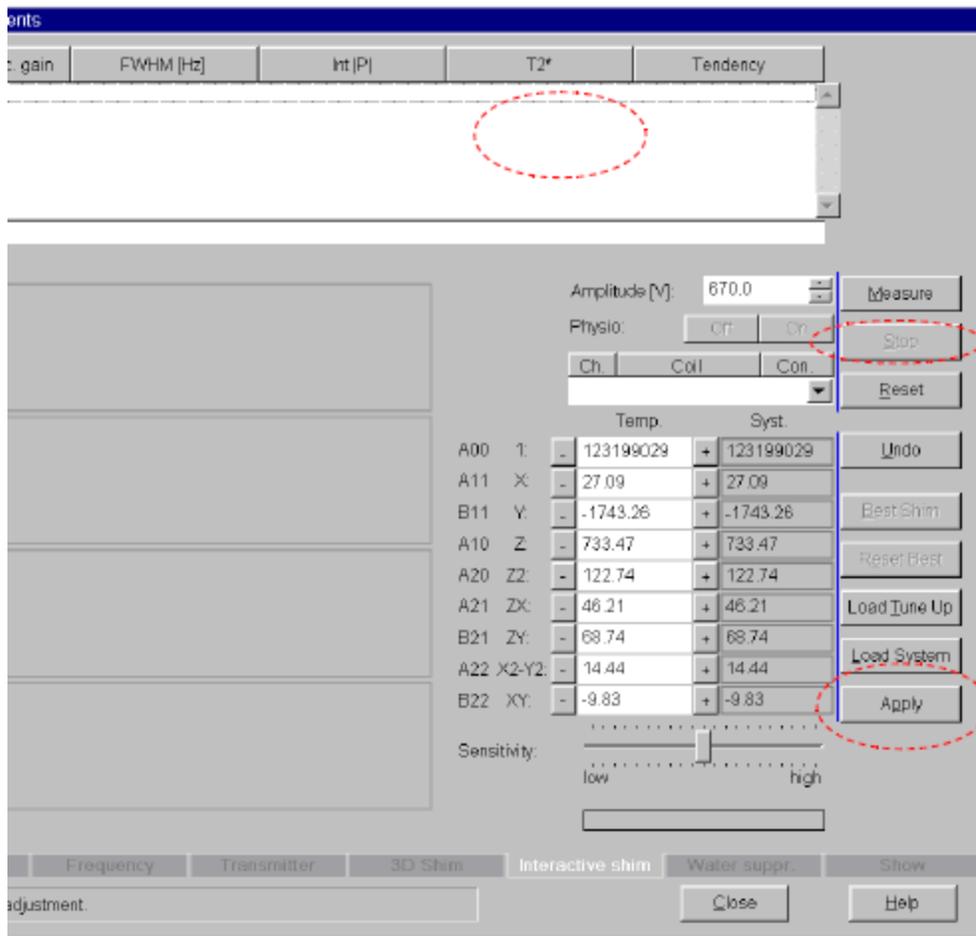
- **Then press Apply**

3D Shim

- **(Do not Load System)**

- Make sure that the Standard is selected.

- **Repeat three times**
  - Measure
  - Calculate
  - Apply

- Close Adjustment window or follow with the T2* measurement

Interactive Shim used to record T2*

- Hit measure and wait until the T2* column is displayed
  - Write down the T2* value
  - Press
    - Stop

  Close the adjustment window