How to select a "shim-map" for gradient autoshimming

All commands written in **bold type** are direct input at the input window prompt. Bracketed **[bold type]** represents a standard VNMR button. The gradient auto-shimming will currently only work on the Varian Inova 500. We are currently working on the Mercury 300 and the Inova 501.

Prior to starting, you should first load initial shims (type **bestshim**), lock, and shim on both z1 and z2. You should also adjust the first five xy shims: x1, y1, xz, yz, and xy. You should iterate between x1 & xz the between y1 & yz as these are strongly coupled. Remember that when adjusting the 'xy' shims, the spinner must be off. Next, query the pulsed field gradient amplifier control by typing **pfgon?** Make sure this parameter is set to **pfgon='nny'**. If not, type **pfgon='nny'**. If you change it from 'nnn' to 'nny' you should go back and touch up the z1 shim.

1. Type **gmapsys** in the Input Window (Run gradient auto-shimming, set parameters, map shims)
2. Click **[shim maps]**
3. Click **[shimmap files]** the **[Current Mapname]** A message "current mapname is : xxx.fid" will be displayed in the output window. If "xxx.fid" corresponds to the shimmap required for the currently installed probe (see the note next to the monitor) skip to step number 4 below.
   - Click **[cd to userdir]** This will change you to *your group* "vnmrsys/gshimlib/shimmaps" directory.
   - Click **[cd to systemdir]** This will change you to the "/export/home/vnmr/gshimlib/shimmaps" directory.
   - Highlight desired shimmap file, e.g., hcn.fid. Again, there should be a note taped nearby telling you which shimmap to use.
   - Click **[load shimmap]**
4. Click **[return]**
5. Click **[set params]**
6. Click **[gradient, nucleus]**
7. Click **[pfg h2]**
8. Type **nt=8** if using CDCl3, otherwise type **nt=4** (if using 501, double value for nt)
9. Click **[return]**
10. Click **[find gzwin]**
11. As soon as experiment starts, type **sa('nt')** then press enter ↵
12. Type **gmapsys**
13. Enter the number of z shims to adjust by setting gzsize. Example, if you would like to adjust the first six shims, type **gzsize=6.** This will adjust z1 through z6.
14. Click **[autoshim on z]**
    - If the fitting step fails, this often means that the sample volume is either too small and / or the sample is improperly positioned. It is recommended to use 0.7 mL total volume, although volumes as low as 0.4 to 0.5 mL often work.
15. When done, you may want to again tweak the "xy" shims.
16. Load a new set of parameters and restart spinner if desired. If you are performing a 2D experiment you must leave the spinner off.
17. If you intend to save your data, you may still be in the "/export/home/vnmr/gshimlib/shimmaps" system directory and you will not be able to save data here. Type **gohome** to automatically change you back to your home directory.