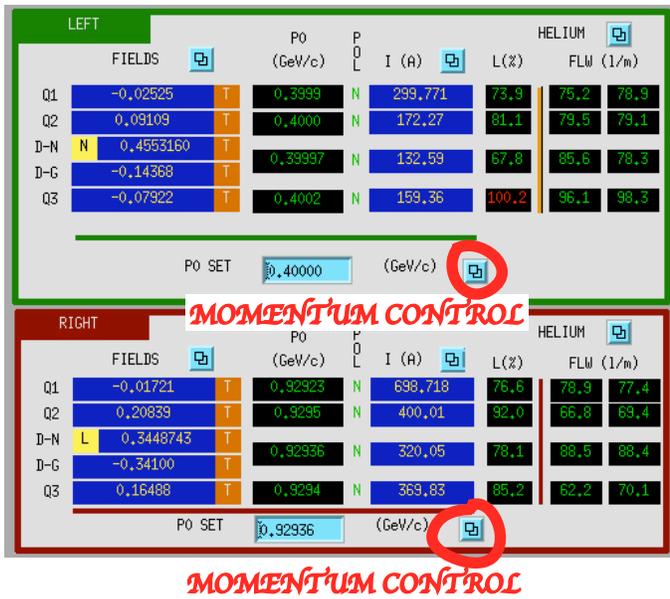
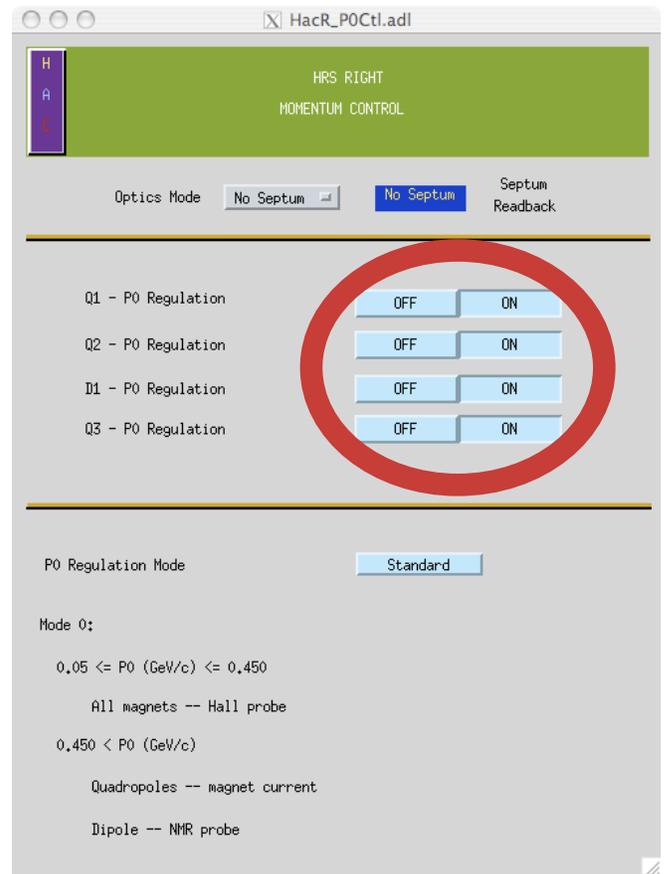


Momentum Regulation

Figure 1A shows the HRS magnet section of the “Tools” screen. Two new buttons have been added. They allow access to the “MOMENTUM CONTROL” parameters used by each HRS. Figure 1B shows those parameters for the right HRS. Of interest are the four toggle switches labeled “XX - P0 Regulation” with “XX” representing each magnet (Q1, Q2, ...). If the “P0 Regulation” button of a given magnet is OFF, that magnet will not respond to the “P0 SET” value entered in the “Tools” page. The magnet momentum tolerance alarms will also be disabled. Conversely, turning ON the “P0 Regulation” button of a given magnet, enables the momentum tolerance alarms of that magnet and it brings the magnet to the “P0 SET” value shown in the “Tools” screen. There is no need to enter again the value of “P0 SET”.



(A)



(B)

Figure 1:

Momentum Tolerance Alarms

The default values of the momentum tolerance alarms of each magnet may not be well suited for low momentum settings. The EPICS variables of interest for the left HRS are **HacL_XX_P0rb.HIHI** and **HacL_XX_P0rb.LOLO** where **XX** = Q1, Q2, D1 or Q3. The corresponding signals for the right HRS are **HacR_XX_P0rb.HIHI** and **HacR_XX_P0rb.LOLO**. Their values can be retrieved or changed using the commands **caget** and **caput** in a Terminal session.

Q2 & Q3 Degaussing

- Set spectrometer to desired new momentum.
- Open the corresponding “MOMENTUM CONTROL” screen and set Q2 & Q3 “P0 Regulation” to OFF. If magnets are not taken out of regulation, they will be reset to the value of “P0 SET”.
- Open the Q2 & Q3 power supply screens (Tools, button next to **I(A)**) and enter desired degaussing current for each magnet (instructions next to whiteboard). Close Q2 & Q3 power supply screens.
- Wait for Q2 & Q3 magnets to reach degaussing current and stay there for the suggested time. After the waiting period, set the Q2 & Q3 “P0 Regulation” toggle buttons (“MOMENTUM CONTROL” screen) back to ON. Magnets should start moving towards “P0 SET”. There is no need to enter again the value of “P0 SET”. Close the “MOMENTUM CONTROL” screen.

Troubleshooting

- The “XX - P0 Regulation” toggle switches should be ON (“MOMENTUM CONTROL” screens). Should be checked after rebooting **iocha14** (left HRS magnets) or **iocha16** (right HRS magnets).
- Hall probe units should be Tesla. This is indicated by a “**T**” next to the magnetic field readings in the “Tools” screen. If this is not the case, open the corresponding Hall probe screen and set the correct units.
- NMR probe units should be Tesla and it should have “Search” ON (need to open the NMR screen to see if this is the case, fourth row of buttons from top). After rebooting **iocha14** or **iocha16**, check that the NMR is still operating and their setup is correct. If the NMR is not operational, power cycle the NMR (instructions next to whiteboard), then set the units and “Search” mode.
- Check that the power supply set current of the magnet having regulation problems is not 0 (open the magnet power supply screen to see this field). Should be checked after rebooting **iocha14**, **iocha16** or **iocha48**. If it is 0, enter the readback value in the set field.