

POSY1 Quick Reference

Instrument computer: **posy1.pns.anl.gov** (VAX/VMS)

Username: PNE

Password: *see a member of the POSY1 staff*

Common commands:

newrun (choose default setup 1891 reflection with 256 x 256 t channels)

start or **start 8383-8385** or **start 8383,8384,8385**

stoprun stop the run and save the data

quitrun stop the run without saving the data

run align run program that aligns the sample

ctl 8383 change control parameters of run 8383

prun control 8383 check control parameters of run 8383

schedule 2(8383)/108000P schedule run 8383 to run for 2 cycles (= 2hours) of 108000 pulses

Looking at data:

typ lh look at data actively being collected (live histogram)

typ fh choose to look at data of a previous run (filed histogram)

runn 8383 specify run 8383 as the data you want to look at

hst x look at data as a function of position channel **x** on the detector

tpt 1,256 select to look at the sum of time channels 1,256

ypt 1 select spin state **1 = up**; spin state **2 = down**

dis display plot

cvs close plot

hst t look at data as a function of time channel **t** (time = wavelength)

$\lambda (\text{\AA}) = 4.07e-4 * t$ (microsec) (when detector in back 12" position)

xpt 20,30 select to look at the sum of position channels 20-30

rdp read number of measured pulses

integrate 1,10 integrate over channels 1-10 as shown in the plot

[@clearmem](#) clear the computer memory buffer while a measurement is running (the data will be lost)

[ymax](#) or [ymin](#) set the min or max value for the y axis.

[ysec](#) change the yscale to the newly defined ymax or ymin, or revert back to the auto scaling

[dx 10,230](#) set the x axis min and max to 10 and 230, respectively

[prun/live status](#) check status of live run

[prun status 8383](#) check final status of run 8383 (info on # of measured pulses in file, title etc.)

[prun header 8383](#) Get header info out of runfile of run 8383, such as # of measured pulses in file, title, total number of monitor counts, monitor counts per channel, total number of detector counts

[dintall](#) if you get the message that a display can't be opened because the "graphics are busy" type this command

Ancillary equipment:

[angle](#) change reflection angle

$$\theta = (x - 27.5)/106.7$$

[translate](#) change translation of sample perpendicular to beam

[janis](#)

or [magnet](#) change field in cryostat

[rdt](#) read temperature (select 37: Lakeshore LS340)

[temtur](#) change temperature (select 37: Lakeshore LS340)

[analyzer](#) move polarization analyzer in or out.

Logging in as the instrument account on the LINUX system at the instrument

Username: *posyl* *case sensitive !!!*

Password: *see a member of the POSY1 staff* *case sensitive !!!*

Data analysis: **aragorn.pns.anl.gov**, **boromir.pns.anl.gov** or **gimli.pns.anl.gov** (LINUX)

Username: *your IPNS LINUX Cluster username* *case sensitive !!!*

Password: *your IPNS LINUX Cluster password* *case sensitive !!!*

Run IDL program:

[posyidl2](#)

Select [POSY1](#) button

Select menu **Data Analysis**
 Analyze Data
 Spinread

Select menu **Data Analysis**
 Analyze Data
 Spinref

Select menu **Data Analysis**
 Analyze Data
 Merge Reflectivity Files

Select menu **Plotting**
 Analyzed Data

Select menu **Calculation**
 Layers

Also:

Select menu **Plotting**
 Contour (make 2D contour plot of **angle** vs **wavelength** or **qx** vs **qz**)

Remote login to VAX/VMS computers via LINUX systems:

- 1) Log into **dasmmain.pns.anl.gov** using same username and password as for **gimli.pns.anl.gov**
- 2) type: `rlogin -l pne posy1` to log into instrument computer **posy1.pns.anl.gov**

OR

- type: `rlogin -l posy ipns` to log into data analysis computer **ipns.pns.anl.gov**
- 3) type: `anyterm`
- 4) type IP address of local computer

JANIS/MAGNET definitions:

$B_x \text{ max} = 7999 \text{ G}$

$B_y \text{ max} = 19999 \text{ G}$

$B_z \text{ max} = 7999 \text{ G}$

$0^\circ \leq \alpha \leq 180^\circ$: α is the angle with z axis

$-180^\circ < \beta \leq 180^\circ$: β is the angle with the x axis within the x-y plane.

+Hx: $\alpha = 90^\circ, \beta = 0^\circ$

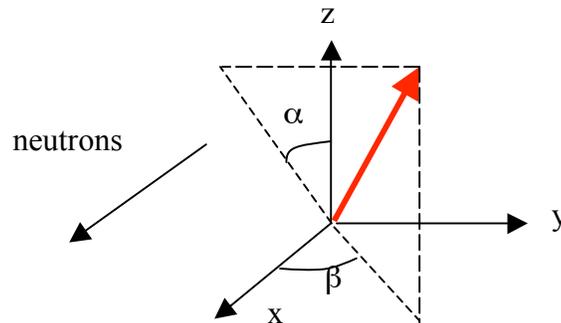
-Hx: $\alpha = 90^\circ, \beta = 180^\circ$

+Hy: $\alpha = 90^\circ, \beta = 90^\circ$

-Hy: $\alpha = 90^\circ, \beta = -90^\circ$

+Hz: $\alpha = 0^\circ, \beta = 0^\circ$

-Hz: $\alpha = 180^\circ, \beta = 0^\circ$



Stepsize; always use default of 0 when ramping field along any of the main axis.

Always choose the default (0) of ramping down the leads & turning the heater off (unless your going to directly change the field again after it has reached the desired set point)