BASIC SPEC COMMANDS

Useful spec commands taken from the manual available at the beamline

MOTOR AND COMPONENT MNEMONICS

Motors:

Diffractometer circles: *tth, om, chi, phi*
Sample translation stages : *x,y,z*
Conventional slit systems: *s1hg (horizontal gap), s1vg (vertical gap), s3eqtr (equatorial transition), s3tth (tilt parallel to theta), s4eqtr, s4tth*
Soller: *gid*
Attenuator unit: *filt1*

Others:

Quick-Photon-Shutter

SETTING MOTOR POSITIONS AND MOVING MOTORS

Command	Extension ([...] optional)	Description
inshutter		shut quick photon shutter
outshutter	*[time]*	open quick photon shutter for the given time
umv	*motor1 position1 [motor2 position2]*	move motor(s) to position(s) while updating screen *slits:* pos. value: away from beam neg. value: towards beam *attenuator unit:* for position of different filter refer to schematic (link)
umvr	*motor value*	move motor relatively by a given value while updating screen
wa		„where all", show all motor positions
wm	*motor1 [motor2]*	„where motor", show motor positions of given motor(s)
lm	*motor*	show motor software limits
set	*motor position*	set user position for a motor
tw	*motor value*	tweak a motor interactively

MCA OPERATION

mcaacq	*[time]*	start data acquisition and show in chart (for given time)
mcaroi	*[roiname start finish]*	set energy range ("region of interest") (from min. energy to max.

		energy)
mcacalm		manual energy calibration: with the aid of a calibration sample energy values will be related to MCA channels
mcasetup		MCA setup, for example: *group size*: number of channels *time mode*: real (real time), life (life time taking into account the dead time) *save spectrum during scan*: yes/no Change setup by typing underlined letters as capital letters
detector_info		print presettings
mcaE		toggle between channel mode and energy mode in chart

MOTOR SCANS

ascan	*motor start finish steps time*	move motor from the absolute start to the absolute finish position in the given number of steps and acquire data for the given time
dscan	*motor start finish steps time*	like the ascan command, but start and finish values are relative to current position
a2scan	*motor start finish steps time* *motor start finish steps time*	like the ascan command, but with two motors moving simultaneously
a3scan	*motor start finish steps time* *motor start finish steps time* *motor start finish steps time*	like the ascan command, but with three motors moving simultaneously
dofile	*path/command file*	execute command file (see below), the cammand file should be stored in *~/messfiles/filename*
newfile	*[path/filename]*	create new file in which all data are being stored, command "newfile" without extension prints current data file
plotselect		select plot by setting the ordinate
setplot		make plot settings like scaling and backgraound correction
setscans		make scan settings like settle time at each position
newsample		get title and data file for experiment
splot		print data of last scan
plot_res		print last scans result as COM, FWHM, II

BASICS AND TOOLS

lsdef		print all standard spec macros
lsd x		print all commands starting with x
ls ???		print all commands existing of 3 letters
ls *scan		print all commands containing the string "scan"
command; command		put semicolons between successive commands
(arrow key)		print previous commands from history
[Strg]+C		stop running process
+, -, *,%		Spec as calculator: arithmetic operations
sin (), atan(), log(), sqrt()		Spec as calculator: Cmath functions
ct	*time*	starts counter for given time, see manual p. 140 („Counting Macros")
help	*macroname*	print help for macro, quit with „q"

hi		print history (previous 1000 commands)
p		print command e.g. for variables as time and CEN
prdef	*[macro]*	print macro definition and path
pwd		print working directory
quit		quit program like spec
syms		print all variables

WIGGLER INFORMATION AND Z ADJUSTMENT ROUTINE

ring_info		print electron beam current, wiggler magnetic field, live time and electron beam position
wa_datenfile		create datafile containing all motor positions and electron beam current
laser_on		switch laser on
laser_off		switch laser off
z_adjust		z adjustment routine

CREATING COMMAND FILES

Command files contain all commands are being successively executed by spec. They can be created with a basic editor (like Kate) and will be initiated by the command „dofile".

typical form:

mcaroi *value*	set region of interest to energy range
newfile *path/command file*	set path for data file
umv *motorname position*	move motors...
ond ... offd	...and show data taken while storing them
printf ("xyz \n")	print text
wa_datenfile	save all motor positions and electron beam current
mcaacq *time*	save MCA data