

Extras - quick tour of available tools



McStas School
Bariloche - Argentina

15th-19th
FEBRUARY
2016



mcgui - pl vs py versions



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Instrument: /Users/pkwi/tmp/BNL_H8_2.instr

Run... Plot Open... Edit

Messages:

```
KI = 2.002 Angs-1 Energy = 14.69 meV
Velocity = 1676 m/s, lambda = 2.36 Angs
[BNL_H8] Initialize

Save [BNL_H8]
Detector: D0_Source_I=0.00316938 D0_Source_ERR=1.39492e-05 D0_Source_N=51624 "D0_Source.psd"
Detector: D1_SC1_Out_I=0.0204218 D1_SC1_Out_ERR=3.53957e-05 D1_SC1_Out_N=334732 "D1_SC1_Out.psd"
Detector: D2_A4_I=0.0137398 D2_A4_ERR=2.90361e-05 D2_A4_N=225525 "D2_A4.psd"
Detector: D4_SC2_In_I=0.00154949 D4_SC2_In_ERR=3.0833e-06 D4_SC2_In_N=256010 "D4_SC2_In.psd"
Detector: D5_SC2_Out_I=0.0012141 D5_SC2_Out_ERR=2.72906e-06 D5_SC2_Out_N=201984 "D5_SC2_Out.psd"
Detector: D7_SC3_In_I=1.22624e-07 D7_SC3_In_ERR=2.22874e-10 D7_SC3_In_N=331552 "D7_SC3_In.psd"
Detector: D8_SC3_Out_I=2.34805e-08 D8_SC3_Out_ERR=9.80451e-11 D8_SC3_Out_N=62774 "D8_SC3_Out.psd"
Detector: D10_SC4_In_I=1.20956e-09 D10_SC4_In_ERR=7.04081e-12 D10_SC4_In_N=32387 "D10_SC4_In.psd"
Detector: He3H_I=9.20884e-10 He3H_ERR=6.14589e-12 He3H_N=24690 "He3.psd"

Finally [BNL_H8:/Users/pkwi/tmp/BNL_H8_2.instr_20161602_095206]. Time: 2 [s]
simulation done
```

Instrument file: BNL_H8.instr

File Simulation neutron site Tools Help (McDoc)

Edit/New Run Read Plot <- Work dir.

Simulation results: ./BNL_H8_20160216_095201/mccode.sim

Status: Done in /Users/pkwi/tmp

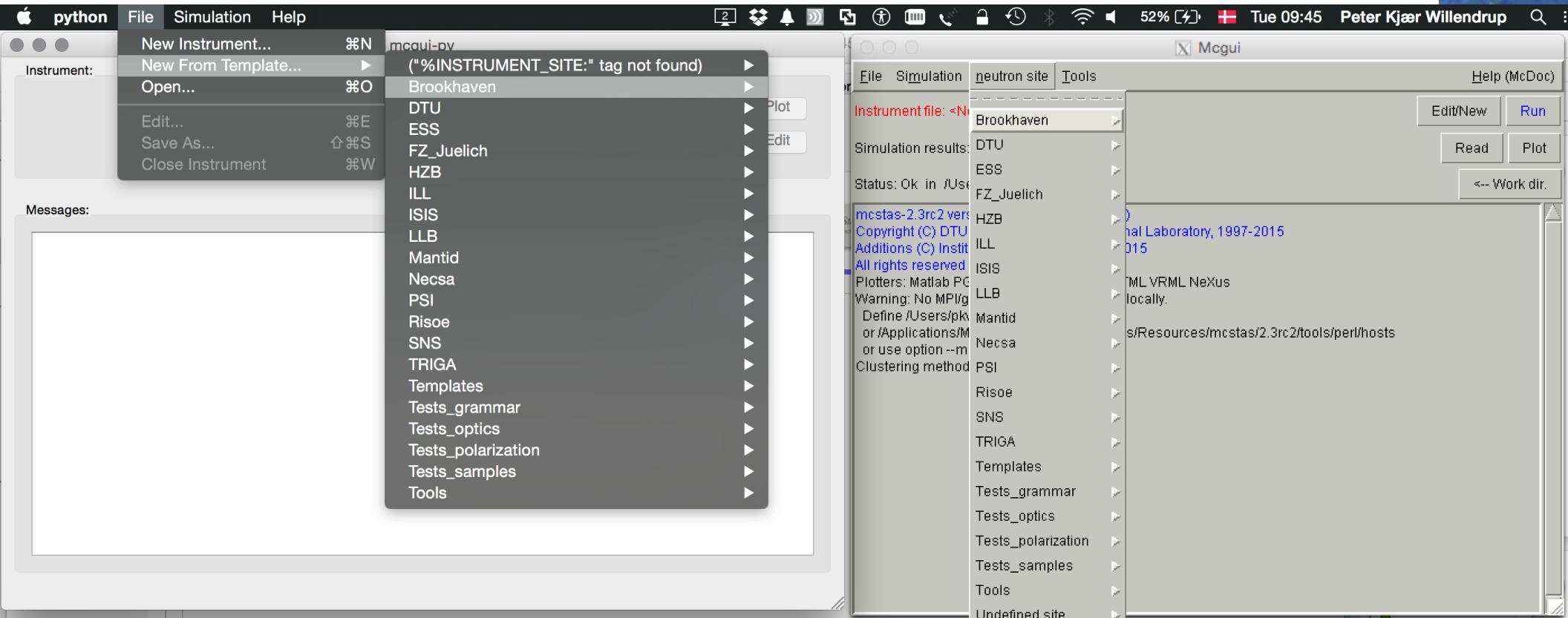
```
[BNL_H8] Initialize
Instrument: BNL_H8 on localhost.
Monochromator : DM = 3.3539
A1 = 20.60, A2 = 41.20 (deg)
KI = 2.662 Angs-1 Energy = 14.69 meV
Velocity = 1676 m/s, lambda = 2.36 Angs
[BNL_H8] Initialize

Save [BNL_H8]
Detector: D0_Source_I=0.00315673 D0_Source_ERR=1.39213e-05 D0_Source_N=51418 "D0_Source.psd"
Detector: D1_SC1_Out_I=0.0203765 D1_SC1_Out_ERR=3.53562e-05 D1_SC1_Out_N=334036 "D1_SC1_Out.psd"
Detector: D2_A4_I=0.0137207 D2_A4_ERR=2.90158e-05 D2_A4_N=225266 "D2_A4.psd"
Detector: D4_SC2_In_I=0.0015422 D4_SC2_In_ERR=3.07604e-06 D4_SC2_In_N=254980 "D4_SC2_In.psd"
Detector: D5_SC2_Out_I=0.00120838 D5_SC2_Out_ERR=2.72265e-06 D5_SC2_Out_N=201359 "D5_SC2_Out.psd"
Detector: D7_SC3_In_I=1.23504e-07 D7_SC3_In_ERR=2.23683e-10 D7_SC3_In_N=335623 "D7_SC3_In.psd"
Detector: D8_SC3_Out_I=2.37352e-08 D8_SC3_Out_ERR=9.85107e-11 D8_SC3_Out_N=63985 "D8_SC3_Out.psd"
Detector: D10_SC4_In_I=1.23657e-09 D10_SC4_In_ERR=7.12662e-12 D10_SC4_In_N=33283 "D10_SC4_In.psd"
Detector: He3H_I=9.46184e-10 He3H_ERR=6.22804e-12 He3H_N=25556 "He3.psd"

Finally [BNL_H8:/BNL_H8_20160216_095201]. Time: 1 [s]
```



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*mcstas: /Users/pkwi/tmp/BNL_H8_2.instr

```
TRACE
/* Source description */
COMPONENT Origin=Progress_bar()
AT (0,0,0) ABSOLUTE
```

```
/* a flat constant source */
COMPONENT Source = Source_simple(
    radius = 0.10,
    dist = 2.7473,
    focus_xw = 0.031, focus_yh = 0.054,
    E0 = Ei,
    dE = 0.03*Ei)
AT (0,0,0) ABSOLUTE
```

```
CO
COMPONENT
COPY
CavitiesIn
CavitiesOut
Collimator_ROC
Collimator_linear
Collimator_radial
```

```
nx=20, ny=20, filename="D1_SC1_Out.psd")
AT (0, 0, 0.9145) RELATIVE SC1
```

```
COMPONENT As1 = Slit(
    xwidth = 0.04450, yheight= 0.0635)
AT (0, 0, 3.6998) RELATIVE Source
```

```
COMPONENT As2 = Slit(
    xwidth = 0.04450, yheight= 0.0635)
AT (0, 0, 4.0808) RELATIVE Source
```

```
COMPONENT As3 = Slit(
    xwidth = 0.04450, yheight= 0.0635)
AT (0, 0, 4.1189) RELATIVE Source
```

```
COMPONENT As4 = Slit(
    xwidth = 0.04450, yheight= 0.0635)
AT (0, 0, 4.4141) RELATIVE Source
```

```
COMPONENT D2_A4 = PSD_monitor(
    xwidth = 0.04450, yheight= 0.0635,
    nx=20, ny=20, filename="D2_A4.psd")
AT (0, 0, 0.0001) RELATIVE As4
```

```
COMPONENT Mono_Cradle = Arm()
AT (0, 0, 5.2746) RELATIVE Source ROTATED (0, A1, 0) RELATIVE Source
```

```
SPLIT COMPONENT PG1Xtal = Monochromator_flat(
    zwidth = 0.1, yheight = 0.08,
```

Edit: BNL_H8.instr

File Edit Search View Insert

```
TRACE
/* Source description */
COMPONENT Origin=Progress_bar()
AT (0,0,0) ABSOLUTE
```

```
/* a flat constant source */
COMPONENT Source = Source_simple(
    radius = 0.10,
    dist = 2.7473,
    focus_xw = 0.031, focus_yh = 0.054,
    E0 = Ei,
    dE = 0.03*Ei)
AT (0,0,0) ABSOLUTE
```

```
COMPONENT D0_Source = PSD_monitor(
    xwidth = 0.03, yheight= 0.054,
    nx=20, ny=20, filename="D0_Source.psd")
AT (0, 0, 0.0001) RELATIVE Source
```

```
/* SC1 collimator. 40=3 slots, 20=6 slots */
```

```
COMPONENT SC1 = Guide(
    w1 = 0.031, h1 = 0.054, l = 0.9144,
    R0 = 1.0, Qc=0.021, alpha=6, m=1, W=0.0003)
AT (0, 0, 2.7473) RELATIVE Source
```

```
COMPONENT D1_SC1_Out = PSD_monitor(
    xwidth = 0.03, yheight= 0.054,
    nx=20, ny=20, filename="D1_SC1_Out.psd")
AT (0, 0, 0.9145) RELATIVE SC1
```

```
COMPONENT As1 = Slit(
    xwidth = 0.04450, yheight= 0.0635)
AT (0, 0, 3.6998) RELATIVE Source
```

```
COMPONENT As2 = Slit(
    xwidth = 0.04450, yheight= 0.0635)
AT (0, 0, 4.0808) RELATIVE Source
```

```
COMPONENT As3 = Slit(
    xwidth = 0.04450, yheight= 0.0635)
AT (0, 0, 4.1189) RELATIVE Source
```

```
COMPONENT As4 = Slit(
    xwidth = 0.04450, yheight= 0.0635)
AT (0, 0, 4.4141) RELATIVE Source
```

Line: 1 of 248 total, Column: 0

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XQuartz Applications Edit Window Help

Component: DiskChopper

Written by: Peter Willendrup
Date: March 9 2006
Version: \$Revision\$
Origin: Risoe
Release: McStas 2.0
Based on Chopper (Philipp Bernhardt), Jitter and beamstop from work by Kaspar Hewitt Klenoe (jan 2006), adjustments by Rob Bewey (march 2006)

Models a disc chopper with nslit identical slits, which are symmetrically distributed on the disc. At time t=0, the centre of the first slit opening will be situated at the vertical axis when phase=0.

For more complicated geometries, see component manual example of DiskChopper GROUPing.
If the chopper is the 1st chopper of the instrument, it sets t time with phase
- Only relevant for when using continuous source modules.
Example: DiskChopper(radius=0.2, theta_0=10, nu=41.7, nslit=3, delay=0, isfirst=1) First chopper
DiskChopper(radius=0.2, theta_0=10, nu=41.7, nslit=3, delay=0, isfirst=0)

Component definition: DiskChopper

Based on Chopper (Philipp Bernhardt), Jitter and beamstop from work by Kaspar Hewitt Klenoe (jan 2006), adjustments by Rob Bewey (march 2006)

Author: Peter Willendrup
Origin: Risoe
Instance name:

DESCRIPTION: (read it and fill-in PARAMETERS section below)

Models a disc chopper with nslit identical slits, which are symmetrically distributed on the disc. At time t=0, the centre of the first slit opening will be situated at the vertical axis when phase=0.

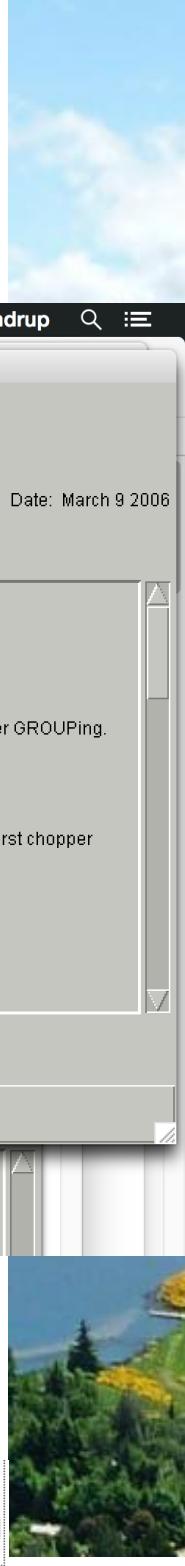
For more complicated geometries, see component manual example of DiskChopper GROUPing.
If the chopper is the 1st chopper of the instrument, it sets t time with phase
- Only relevant for when using continuous source modules.

Example: DiskChopper(radius=0.2, theta_0=10, nu=41.7, nslit=3, delay=0, isfirst=1) First chopper
DiskChopper(radius=0.2, theta_0=10, nu=41.7, nslit=3, delay=0, isfirst=0)

PARAMETERS:
(optional parameters may be left blank, see DESCRIPTION section)
Character type parameters usually require quoting, e.g. filename="name"

theta_0: [deg] (OPTIONAL, default 0)
AT (, ,) RELATIVE
ROTATED (, ,) RELATIVE

Insert Cancel Ok Cancel



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python

Component: DiskChopper

Written by: Peter Willendrup
Date: March 9 2006
Version: \$Revision\$
Origin: Risoe
Release: McStas 2.0
Based on Chopper (Philipp Bernhardt), Jitter and beamstop from work by Kaspar Hewitt Klenoe (jan 2006), adjustments by Rob Bewey (march 2006)

Models a disc chopper with nslit identical slits, which are symmetrically distributed on the disc. At time t=0, the centre of the first slit opening will be situated at the vertical axis when phase=0.

For more complicated geometries, see component manual example of DiskChopper GROUPing.

If the chopper is the 1st chopper of the instrument, it sets t time with phase
- Only relevant for when using continuous source modules.

Example: DiskChopper(radius=0.2, theta_0=10, nu=41.7, nslit=3, delay=0, isfirst=1) First chopper
DiskChopper(radius=0.2, theta_0=10, nu=41.7, nslit=3, delay=0, isfirst=0)

Component definition: DiskChopper
Based on Chopper (Philipp Bernhardt), Jitter and beamstop from work by Kaspar Hewitt Klenoe (jan 2006), adjustments by Rob Bewey (march 2006)

Author: Peter Willendrup
Origin: Risoe
Source name:
DESCRIPTION: (read it and fill-in PARAMETERS section below)

It's a disc chopper with nslit identical slits, which are symmetrically distributed on the disc. At time t=0, the centre of the first slit opening will be situated at the vertical axis when phase=0.

More complicated geometries, see component manual example of DiskChopper GROUPing.

The chopper is the 1st chopper of the instrument, it sets t time with phase
- Only relevant for when using continuous source modules.

Example: DiskChopper(radius=0.2, theta_0=10, nu=41.7, nslit=3, delay=0, isfirst=1) First chopper
DiskChopper(radius=0.2, theta_0=10, nu=41.7, nslit=3, delay=0, isfirst=0)

PARAMETERS:
Optional parameters may be left blank, see DESCRIPTION section)
Character type parameters usually require quoting, e.g. filename="name"

theta_0: [deg] (OPTIONAL, default 0)
radius: (m) Radius of the disc
yheight: (m) Slit height (if = 0, equal to radius). Auto centering of beam at half height.
nu: (Hz) Frequency of the Chopper, omega=2*Pi*nu (algebraic sign defines the direction of rotation)
nslit: (1) Number of slits, regularly arranged around the disk
jitter: (s) Jitter in the time phase
delay: (s) Time 'delay'.
isfirst: (0/1) Set it to 1 for the first chopper position in a cw source (it then spreads the neutron time distribution)
n_pulse: (1) Number of pulses (Only if isfirst)
abs_out: (0/1) Absorb neutrons hitting outside of chopper radius?
AT (, ,) RELATIVE PREVIOUS
ROTATED (, ,) RELATIVE PREVIOUS
 Insert Cancel
AT (0, 0, 4.4141) RELATIVE Source
ROTATED (0, 0, 0) ABSOLUTE



mcgui - pl vs py versions



Instrument: /Users/pkwi/tmp/BNL_H8_2.instr

Start simulation

Instrument parameters (D=floating point, I=integer, S=string)

lambda: 2.36

Simulation

Simulation/Trace: Simulation

Neutron count: 1000000

Output subdir (optional):

Sweep steps (optional):

MPI: No clustering

MPI node count:

Advanced

Random seed:

Gravity: Off

Run... Plot Open... Edit

File Simulation neutron site Tools Help (McDoc)

Instrument file: BNL_H8.instr

Simulation results: <None>

Status: Done in /Users/pkwi/tmp

Instrument source: BNL_H8.instr

Instrument parameters (D=floating point, I=integer, S=string):

lambda (D): 2.36

Output to (dir): 1000000 overwirte Browse...

Neutron count: 1000000 gravity (BEWARE) Random seed:

Simulate # steps: 0 Plot results with: PGPLT

Clustering: None (single CPU) Number of nodes: 2

Inspect component: Source D0_Source

First component: Source D0_Source

Last component: Job Source D0_Source

Start Cancel

but has parameter of

but has parameter of

mcgui -

mccode-py configuration

mcrun
mcrun-py

mcplot
mcplot

mcdisplay
mcdisplay-matplotlib-py

cc
gcc

C flags
-g -fopenmp -O2

MPIcc
mpicc

MPIrun
mpirun

nodes
4

Ok Save Cancel

Plot window showing a heatmap of detector flatness data.

McStas: Preferences

Plotting options:
PGPLOT (original McStas)
 3-pane view with PGPLOT trace

Clustering:
MPI (clusters)
 Force compilation when gridding

Editor options:
Advanced built-in editor

GUI Palette
#c6c6c0

GUI Font
-*-arial-normal-r-*-*-120-*_*_*_*_*

Surround strings with quotes

Runtime tool options:
Execution/run command to use:
mcrun
Plot command to use:
mcplot
Trace command to use:
mcdisplay

Compilation options:
 Apply compiler flags: (define in textbox below)
-fopenmp -g -O2 -L/usr/local/lib -I\$Nexus -DUSE_NEXUS

Compiler to use:
cc
MPI Compiler to use:
mpicc.ccc
MPIrun command to use:
mpirun

Optimization options:
Precision
1e-3

OK

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mcrun pl vs py versions



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```
XQuartzScreenSnapz004.png
pkwi@pkwi-mbp15:~/Pictures$ open XQuartzScreenSnapz00*
pkwi@pkwi-mbp15:~/Pictures$ cd
pkwi@pkwi-mbp15:~$ cd tmp/
pkwi@pkwi-mbp15:~/tmp$ mcrun-py --help
Usage: mcrun.py [-cpnN] Instr [-sndftgahil] params={val|min,max|min,guess,max}...
Options:
--version      show program's version number and exit
-h, --help      show this help message and exit

mcrun options:
-c, --force-compile    force rebuilding of instrument
-p FILE, --param=FILE   read parameters from file FILE
-N NP, --numpoints=NP   set number of scan points
-L, --list              use a fixed list of points for linear scanning
-M, --multi             run a multi-dimensional scan
--mpi=N_CPU             spread simulation over NB_CPU machines using MPI
--machines=FILE         read machine names from FILE (MPI/grid)
--slave=HOST            execute simulation on distant HOST (SSH grid)
--optimise=COMP          Add COMP to the list of monitors to maximise
                         (optimisation criteria, requires Math::Amoeba)
--optimise-all          Maximise all monitors
--optimise-prec=PREC     relative requested accuracy of criteria (default:
                         1e-3)
--optimise-file=FILE     store optimisation results in FILE (defaults to:
                         "mcstas.dat")
--test                  execute McStas self-test and generate report
--no-cflags             disable optimising compiler flags for faster
                         compilation
--verbose               enable verbose output

Instrument options:
-s SEED, --seed=SEED      set random seed (must be: SEED != 0)
-n COUNT, --ncount=COUNT   set number of neutrons to simulate
-t, --trace                enable trace of neutron through instrument
-g, --gravitation          enable gravitation for all trajectories
-d DIR, --dir=DIR           put all data files in directory DIR
--format=FORMAT            output data files using format FORMAT (format list
                         obtained from <instr>.out -h)
--no-output-files          Do not write any data files
-i, --info                 Detailed instrument information

pkwi@pkwi-mbp15:~/tmp$
```

```
tmp - pkwi@pkwi-mbp15: ~/tmp - bash - 103x49
pkwi@pkwi-mbp15:~/tmp$ mcrun --help
mcrun: reading local mcstas configuration from /Users/pkwi/.mcstas/mccode_config.perl
/usr/local/bin/mcrun: reading local mcstas configuration from /Users/pkwi/.mcstas/mccode_config.perl
*** No directory given - placing data in _20160216_095914 ***
"Usage: mcrun [-cpnN] Instr [-sndftgahil] params={val|min,max|min,guess,max}"
mcrun options:
-c      --force-compile  Force rebuilding of instrument.
-p FILE  --param=FILE   Read parameters from file FILE.
-n COUNT --ncount=COUNT Set number of neutrons to simulate.
-N NP    --numpoints=NP  Set number of scan points.
--grid=N_CPU   --multi=N_CPU  Spawn simulations to multiple machine/cores grid.
                                         see the documentation for more info.
--mpi     --mpi=N_CPU    Spread simulation over NB_CPU machines using MPI
--machines=MACHINES  --slave=HOST  Read machine names from file MACHINES (MPI/grid)
--slave=HOST        --optim=COMP  Execute simulation on distant HOST (SSH grid)
                                         Add COMP to the list of monitors to maximize
                                         (optimization criteria, requires Math::Amoeba)
                                         Add COMP to the list of monitors to maximize
                                         (optimization criteria, requires Math::Amoeba)
                                         Maximize all monitors
                                         Relative requested accuracy of criteria (1e-3)
                                         Defines filename for storing optim results.
                                         (Defaults to "mcoptim_XXXX.dat")
                                         Execute McStas selftest and generate report
                                         Does not use CFLAGS for faster compilation
Instr options:
-s SEED   --seed=SEED      Set random seed (must be != 0)
-n COUNT  --ncount=COUNT   Set number of neutrons to simulate.
-d DIR    --dir=DIR         Put all data files in directory DIR.
-f FILE   --file=FILE       Put all data in a single file.
-t        --trace           Enable trace of neutron through instrument.
-g        --gravitation     Enable gravitation for all trajectories.
-a        --data-only        Do not put any headers in the data files.
--no-output-files          Do not write any data files.
-h        --help             Show help message.
-i        --info             Detailed instrument information.
--format=FORMAT             Output data files using format FORMAT.
                                         (format list obtained from <instr>.out -h)
                                         This program both runs mcstas with Instr and the C compiler to build an
                                         independent simulation program. The following environment variables may be
                                         specified for building the instrument:
                                         MCSTAS          Location of the McStas and component library
                                         (/Applications/McStas-2.3rc2.app/Contents/Resources/mcstas/2.3rc2).
                                         MCSTAS_CC        Name of the C compiler
                                         (cc)
                                         MCSTAS_CFLAGS   Options for compilation
                                         (-lm -g -O2 -L/usr/local/lib -lNeXus -DUSE_NEXUS )
                                         SEE ALSO: mcstas, mcdoc, mcplot, mcdisplay, mcgui, mcresplot, mcstas2vitess
                                         DOC: Please visit http://www.mcstas.org/
                                         ** No instrument definition name given

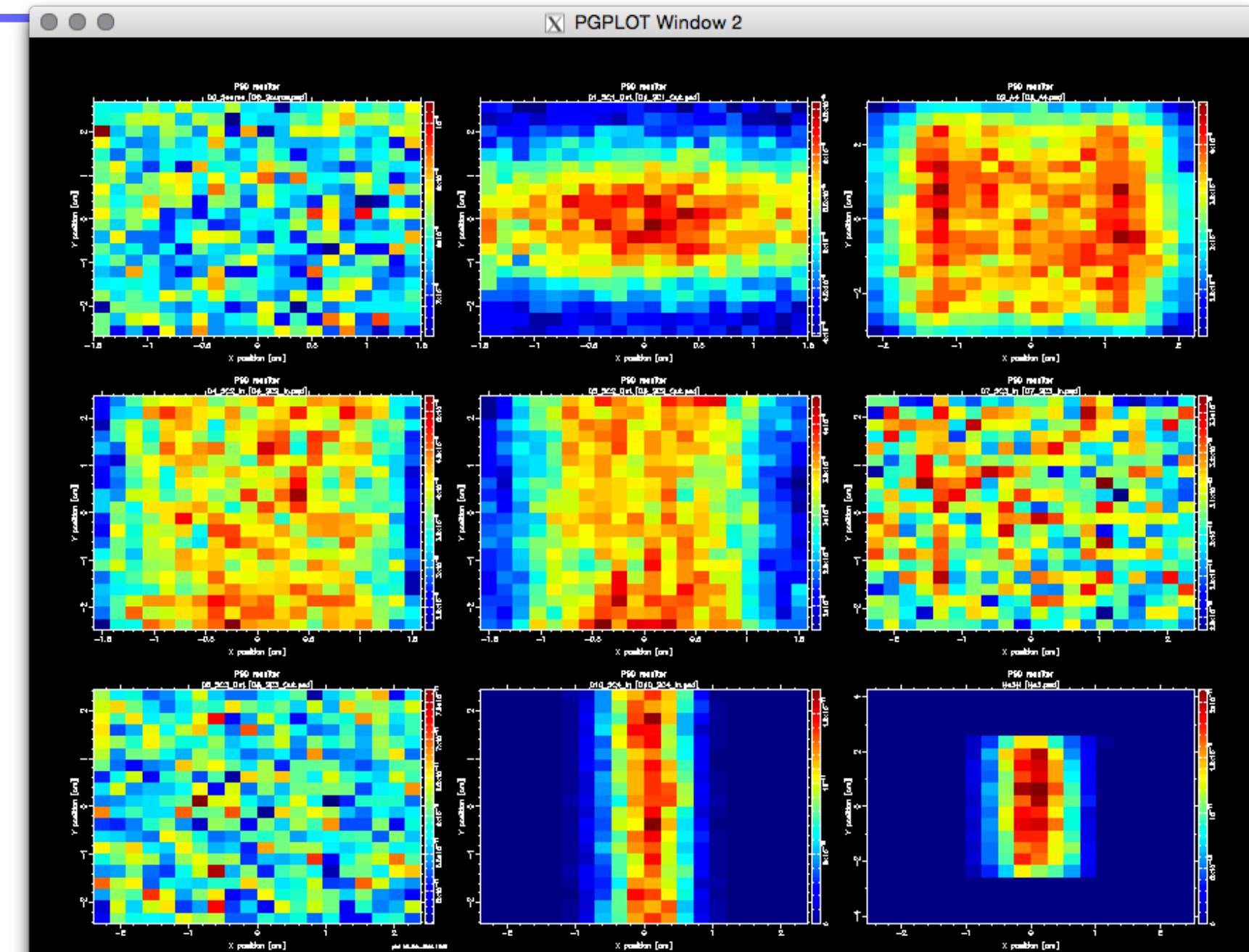
pkwi@pkwi-mbp15:~/tmp$
```

mcplot (--format=PGPLOT)



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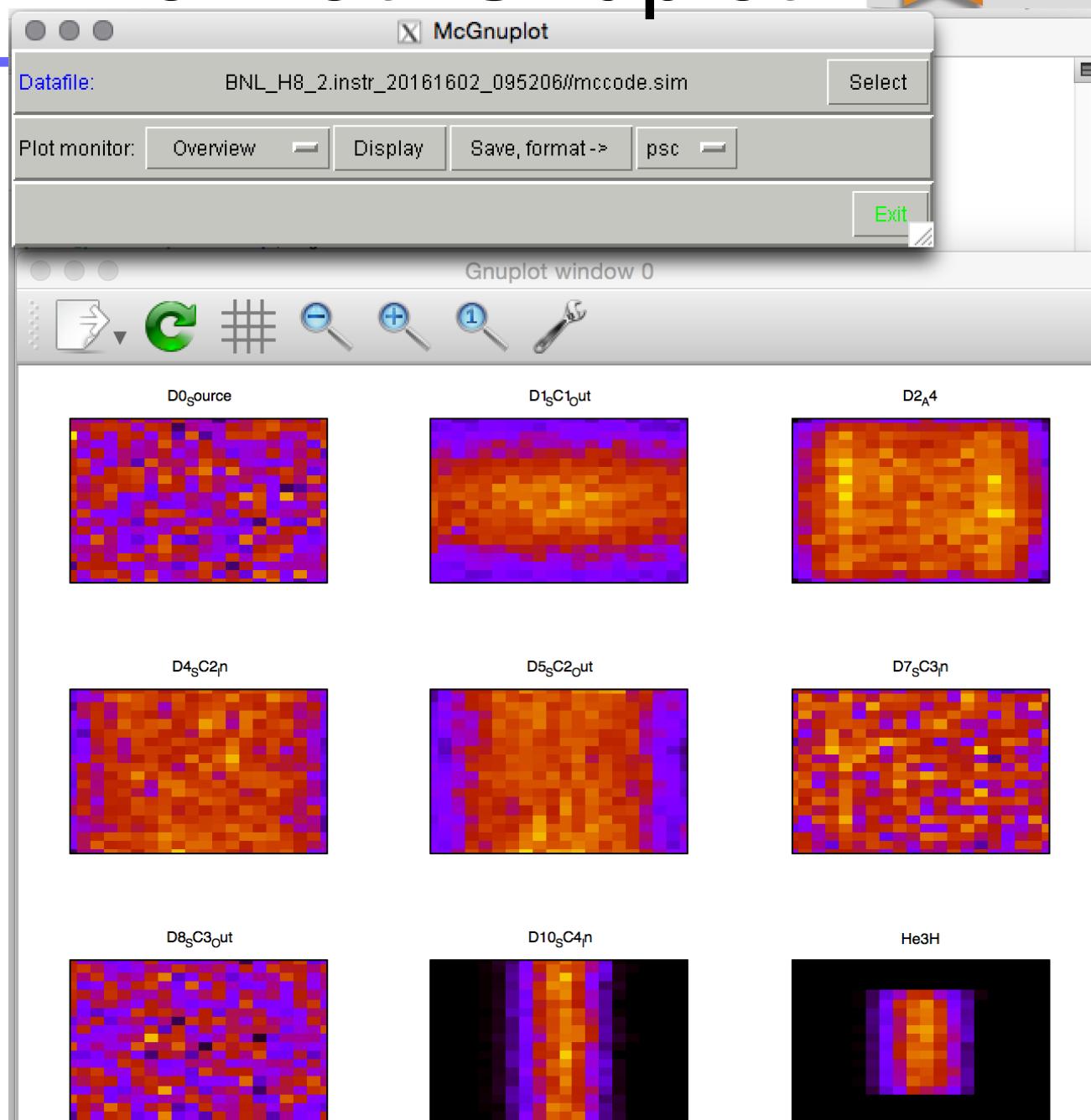


mcplot --format=Gnuplot



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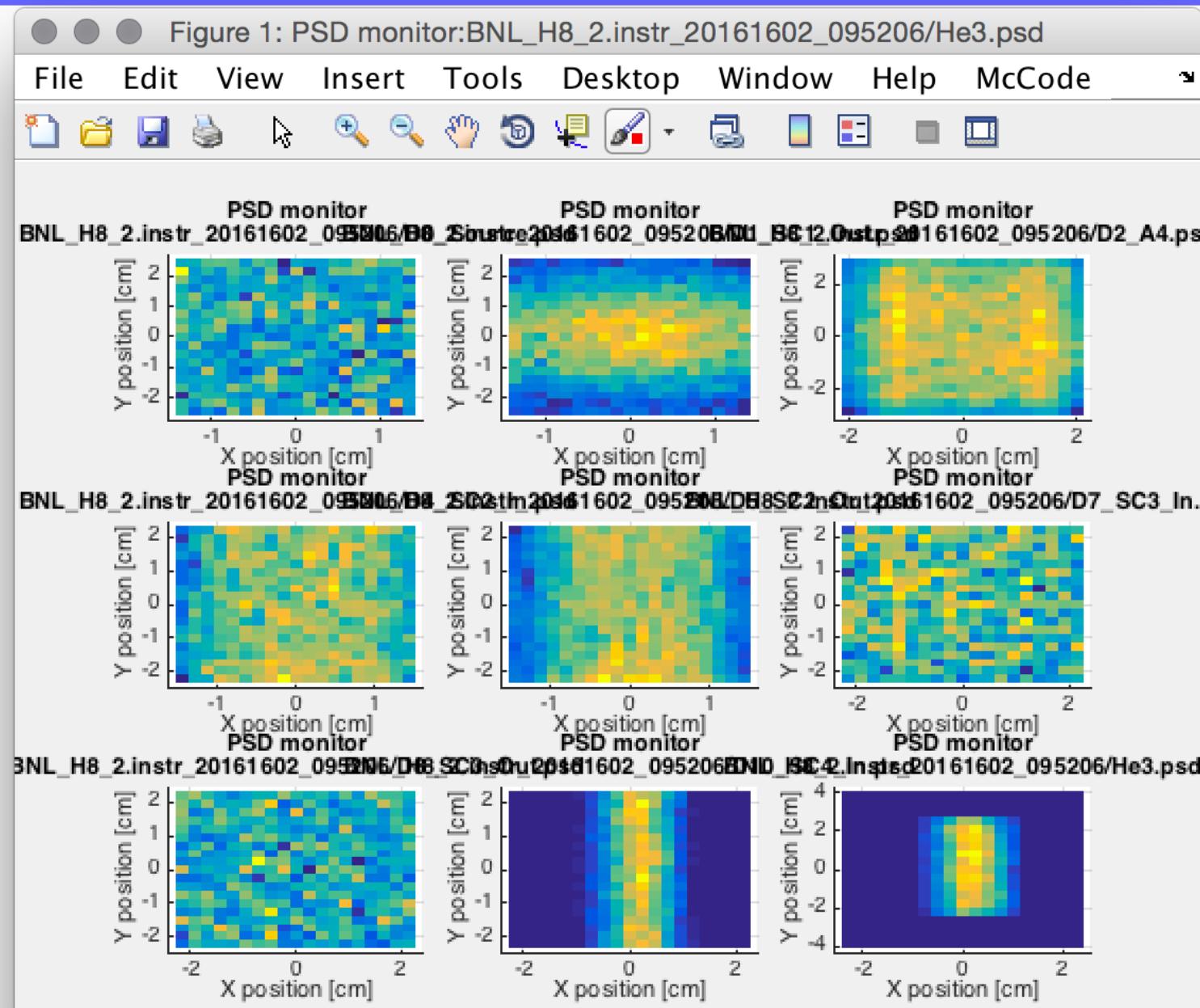


mcplot --format=Matlab



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mcplot-matlab



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```
tmp — pkwi@pkwi-mbp15: ~tmp — MATLAB — 88x50
/usr/local/bin/mcplot: reading local mcstas configuration from /Users/pkwi/.mcstas/mccod
e_config.perl
Click on a plot for full-window view.
Press key for hardcopy (in graphics window), 'Q' to quit
  'P' BW postscript
  'C' color postscript
  'N' PNG file
  'M' PPM file
  'G' GIF file
  'L' Toggle log10 plotting mode
  'T' Toggle contour plotting mode
  'Q' quit
^C
pkwi@pkwi-mbp15:~/tmp$ mcplot-mat BNL_H8_2.instr_20161602_095206/
mcplot-matlab      mcplot-matplotlib-py
pkwi@pkwi-mbp15:~/tmp$ mcplot-mat BNL_H8_2.instr_20161602_095206/
mcplot-matlab      mcplot-matplotlib-py
pkwi@pkwi-mbp15:~/tmp$ mcplot-matlab BNL_H8_2.instr_20161602_095206/
```

```
< M A T L A B (R) >
Copyright 1984-2014 The MathWorks, Inc.
R2014b (8.4.0.150421) 64-bit (maci64)
September 15, 2014
```

To get started, type one of these: helpwin, helpdesk, or demo.
For product information, visit www.mathworks.com.

```
Loading BNL_H8_2.instr_20161602_095206/mccode.sim (McCode simulation)
Loading BNL_H8_2.instr_20161602_095206/D0_Source.psd (McCode format)
Loading BNL_H8_2.instr_20161602_095206/D1_SC1_Out.psd (McCode format)
Loading BNL_H8_2.instr_20161602_095206/D2_A4.psd (McCode format)
Loading BNL_H8_2.instr_20161602_095206/D4_SC2_In.psd (McCode format)
Loading BNL_H8_2.instr_20161602_095206/D5_SC2_Out.psd (McCode format)
Loading BNL_H8_2.instr_20161602_095206/D7_SC3_In.psd (McCode format)
Loading BNL_H8_2.instr_20161602_095206/D8_SC3_Out.psd (McCode format)
Loading BNL_H8_2.instr_20161602_095206/D10_SC4_In.psd (McCode format)
Loading BNL_H8_2.instr_20161602_095206/He3.psd (McCode format)
```

```
ans =
Columns 1 through 5
  [1x1 struct]    [1x1 struct]    [1x1 struct]    [1x1 struct]    [
Columns 6 through 9
  [1x1 struct]    [1x1 struct]    [1x1 struct]    [1x1 struct]
>> 
```

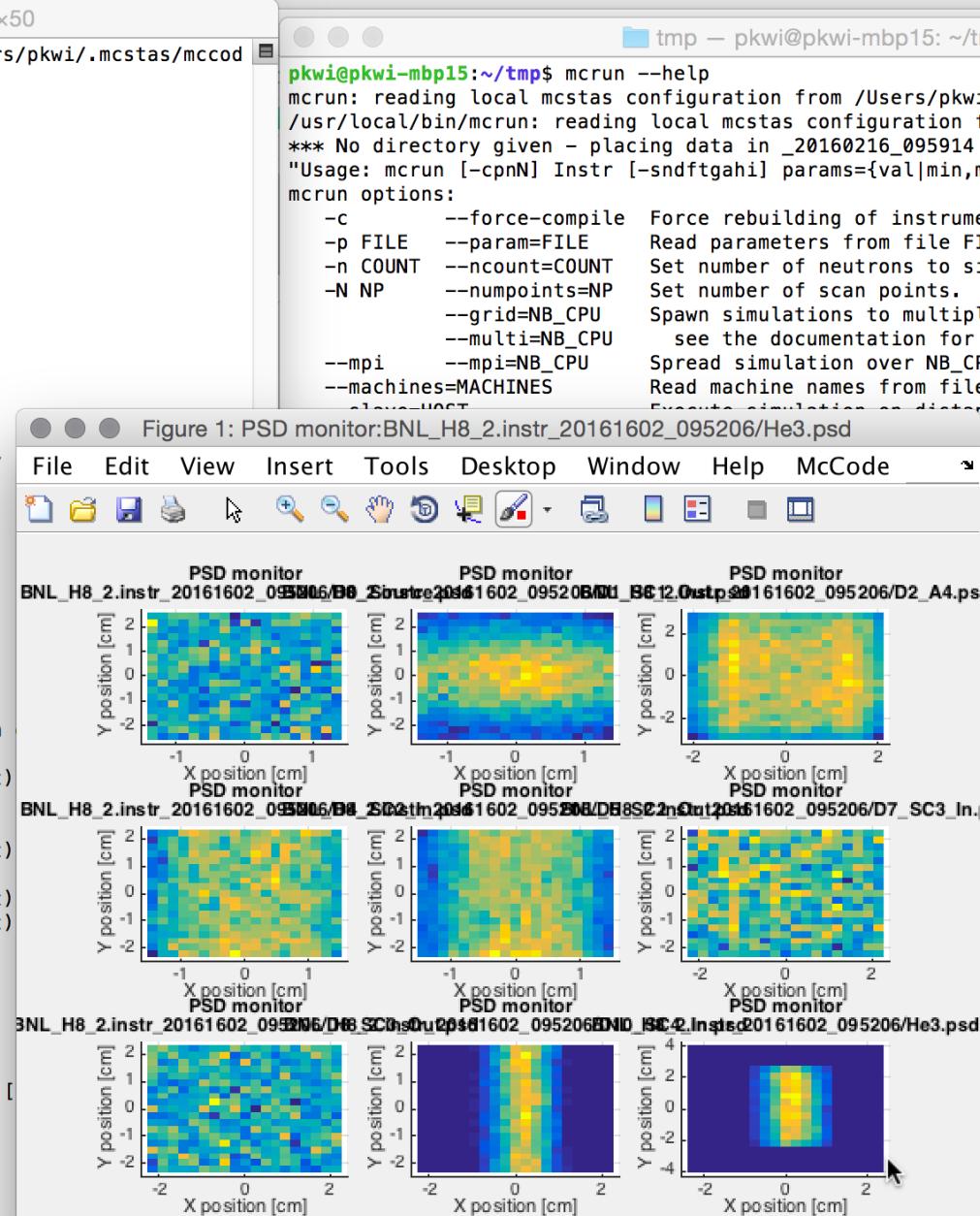


Figure 1: PSD monitor:BNL_H8_2.instr_20161602_095206/He3.psd

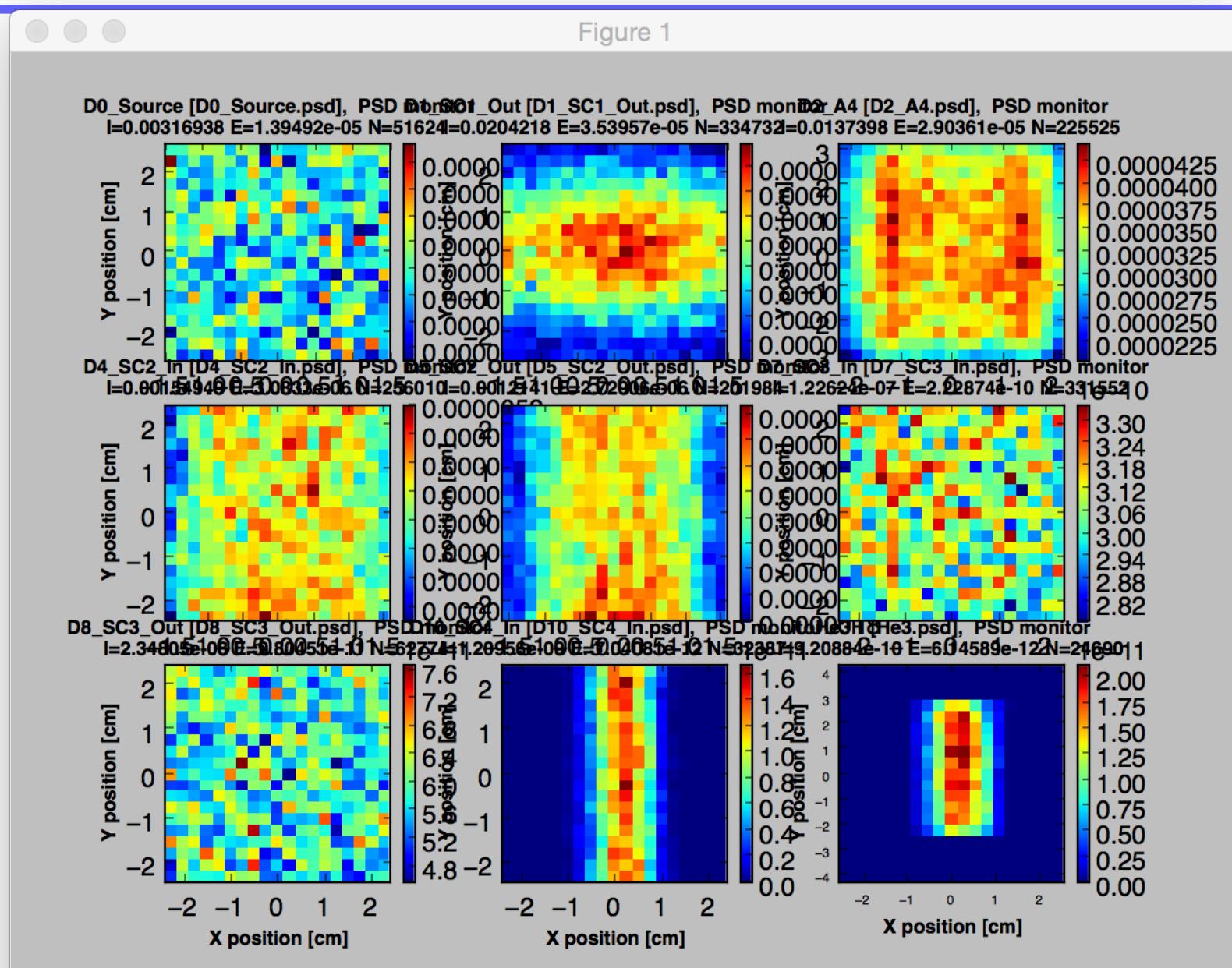
mcplot-matplotlib-py



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2016

Figure 1



File: BNL_H8_2.instr_20161602_095206/
mcplot Keys: h-help [ooonlyndnll]



mcplot-gnuplot-py



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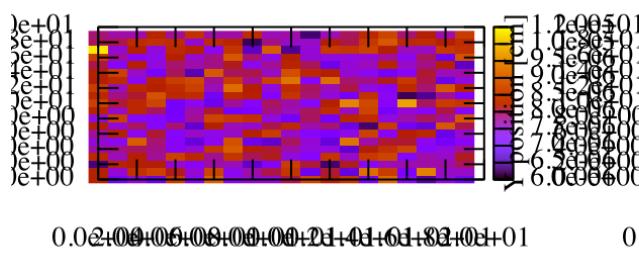
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BNL_H8.c
BNL_H8.instr
BNL_H8.o
BNL_H8.out

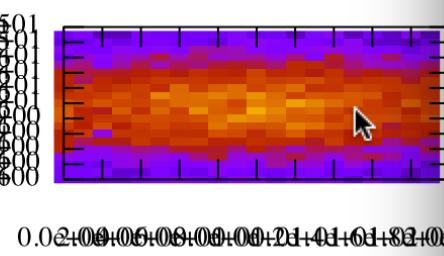
BNL_H8_2.out
BNL_H8_2.out.dSYM
BNL_H8_20160216_095201

Mono_f
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Mono_1

PSD monitor



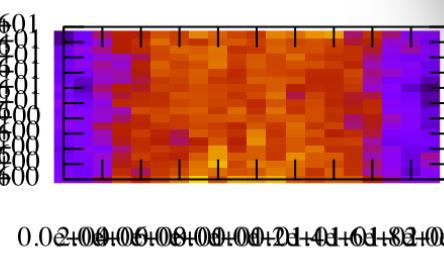
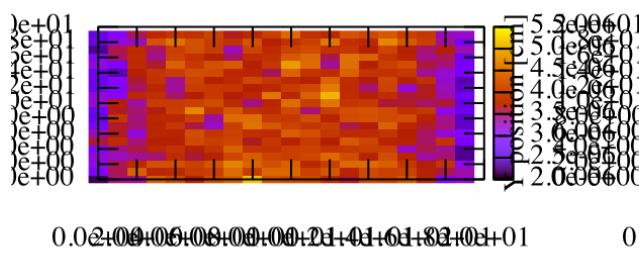
PSD monitor



X position [cm]

X position [cm]

PSD monitor



X position [cm]

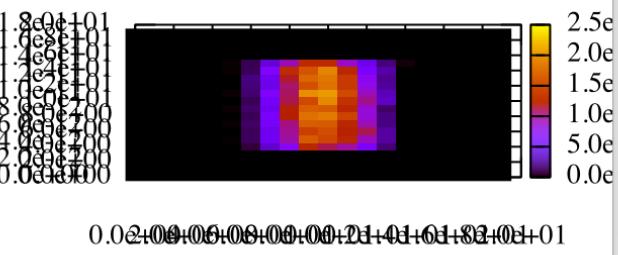
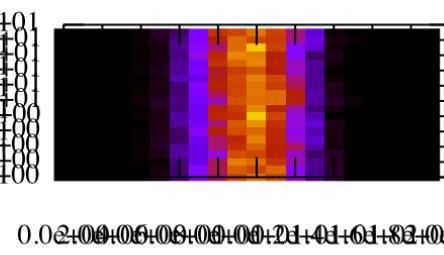
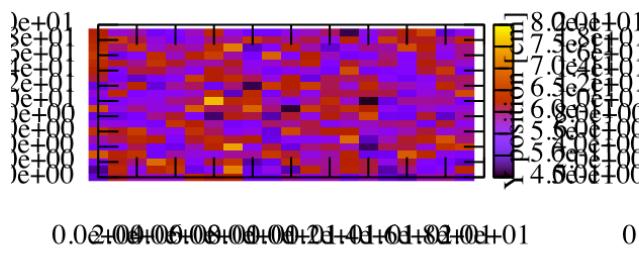
X position [cm]

X position [cm]

PSD monitor

PSD monitor

PSD monitor



McGnuplot

Click to plot

< overview >
D0_Source.psd
D10_SC4_In.psd
D1_SC1_Out.psd
D2_A4.psd
D4_SC2_In.psd
D5_SC2_Out.psd
D7_SC3_In.psd
D8_SC3_Out.psd
He3.psd

Options

Log scale (l)

Menu

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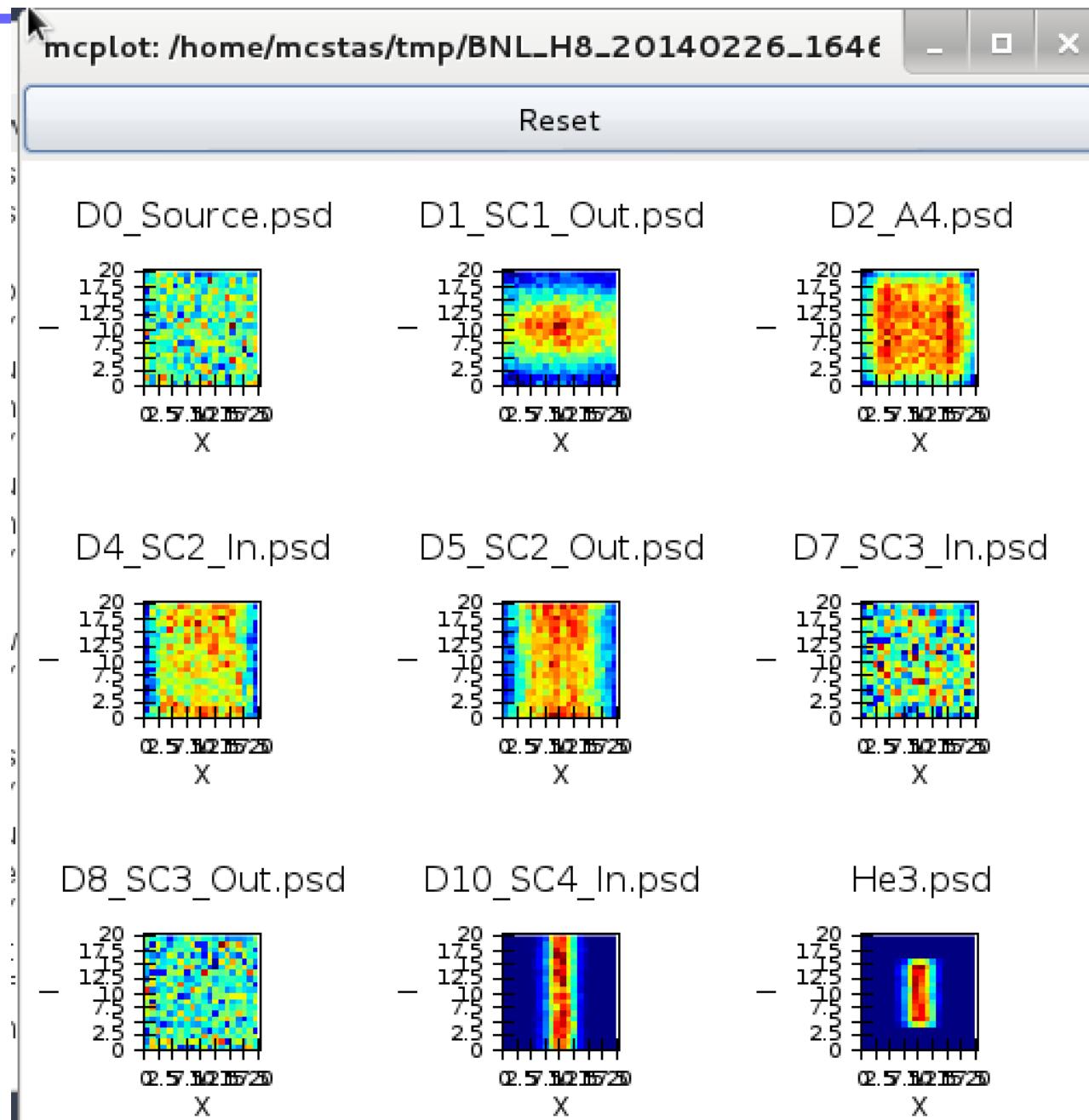


mcplot-chaco-py



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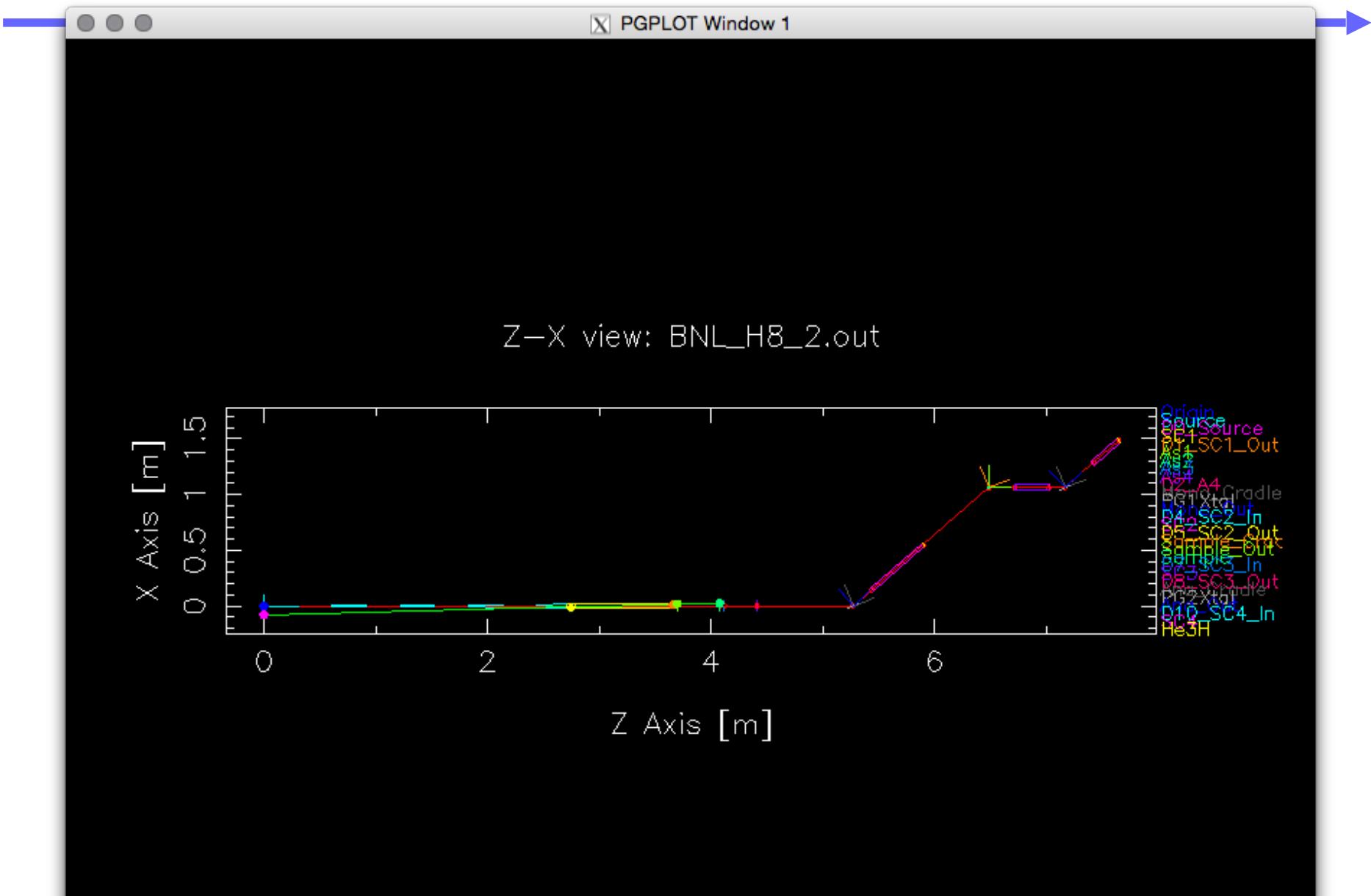


mcdisplay



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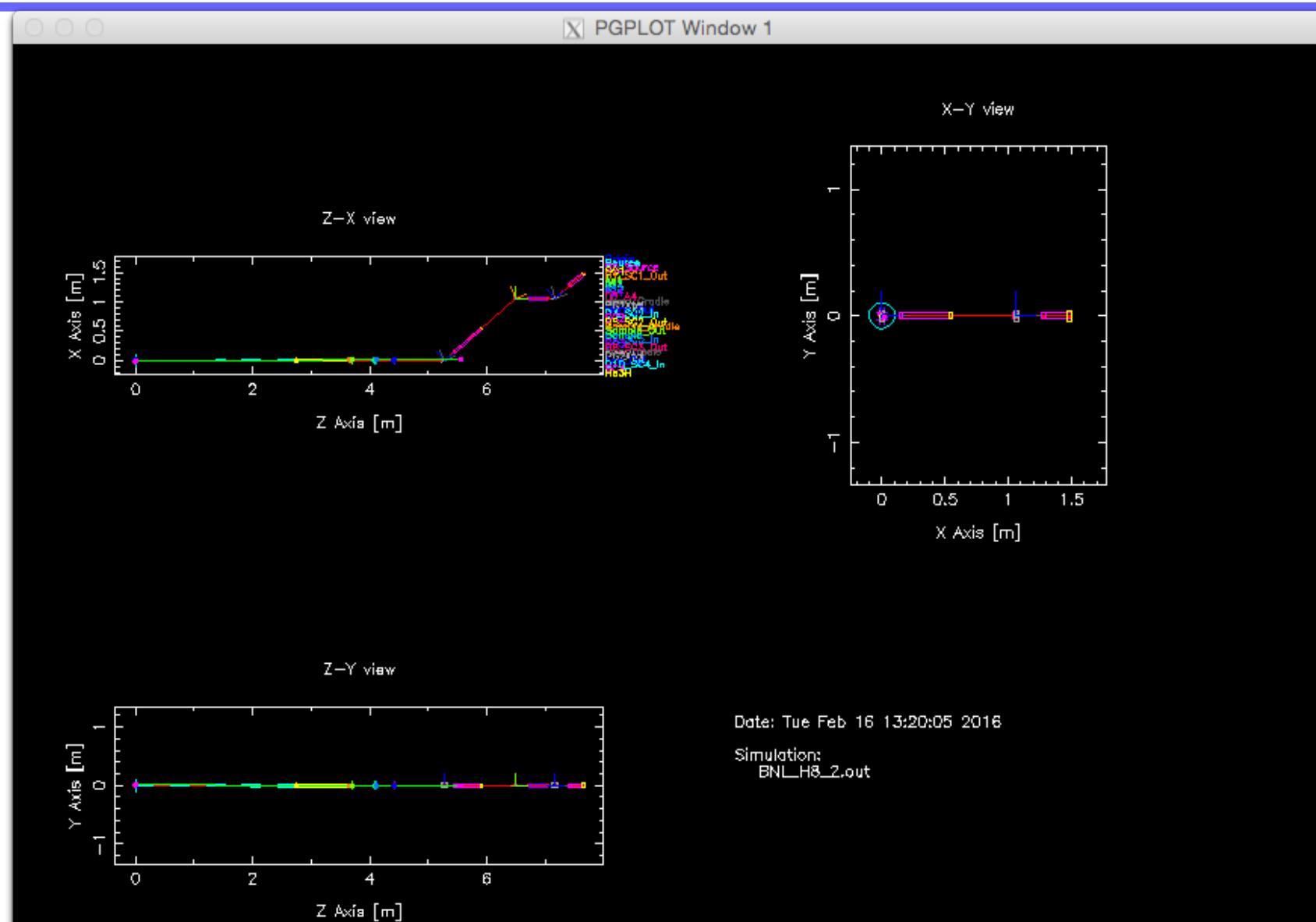


mcdisplay -m



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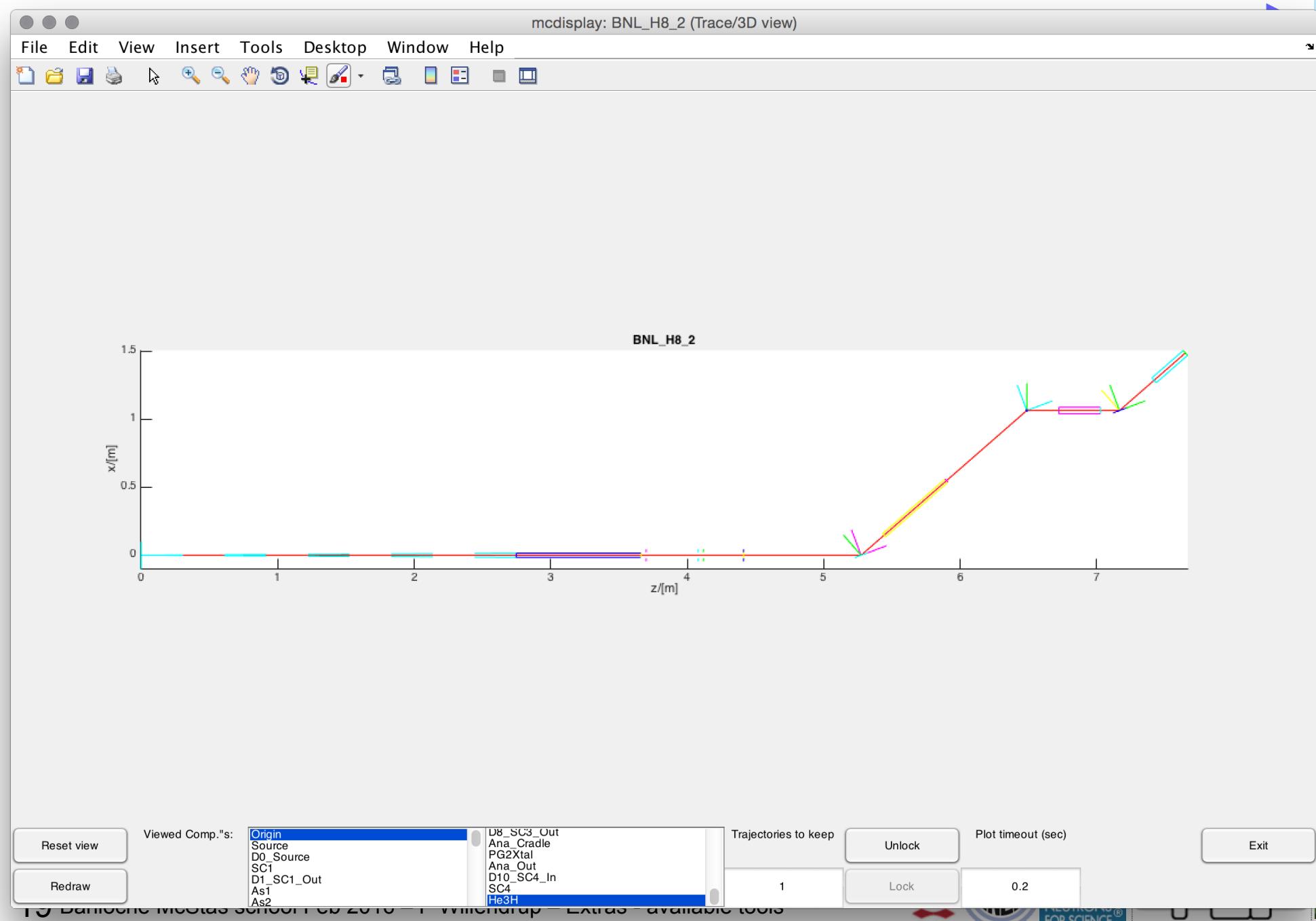


mcdisplay --format=Matlab



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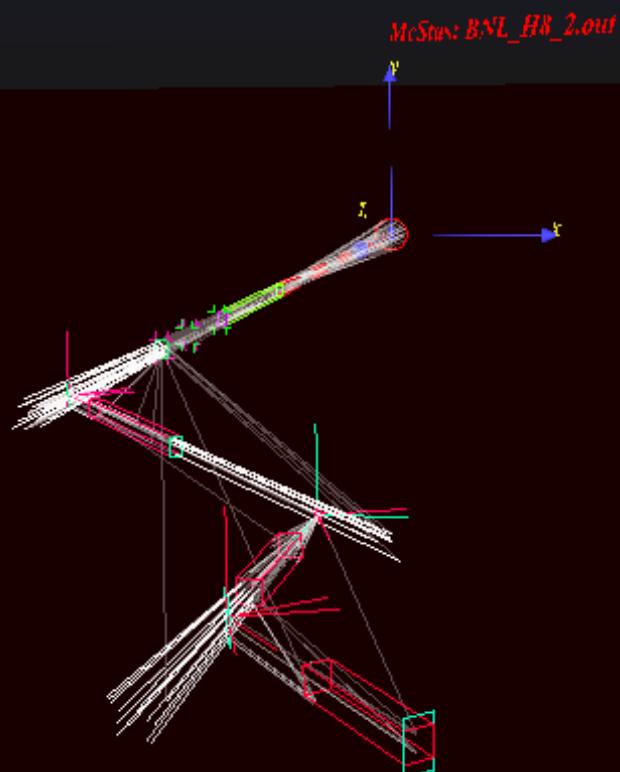
mcdisplay --format=VRML



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McStas: BNL_H8_2.out instrument



noncommercial version
instantreality

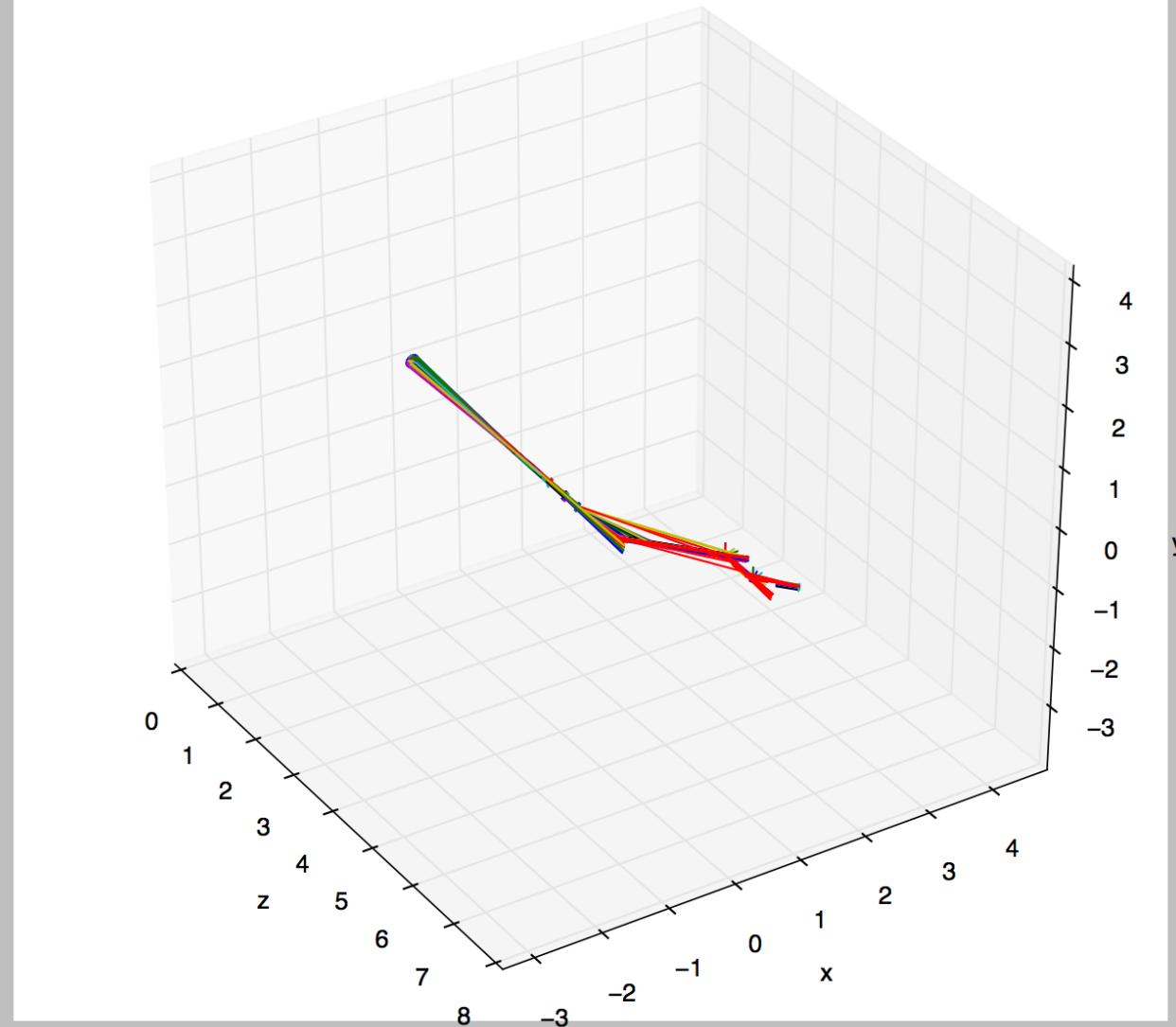
UT

mcdisplay-matplotlib-py



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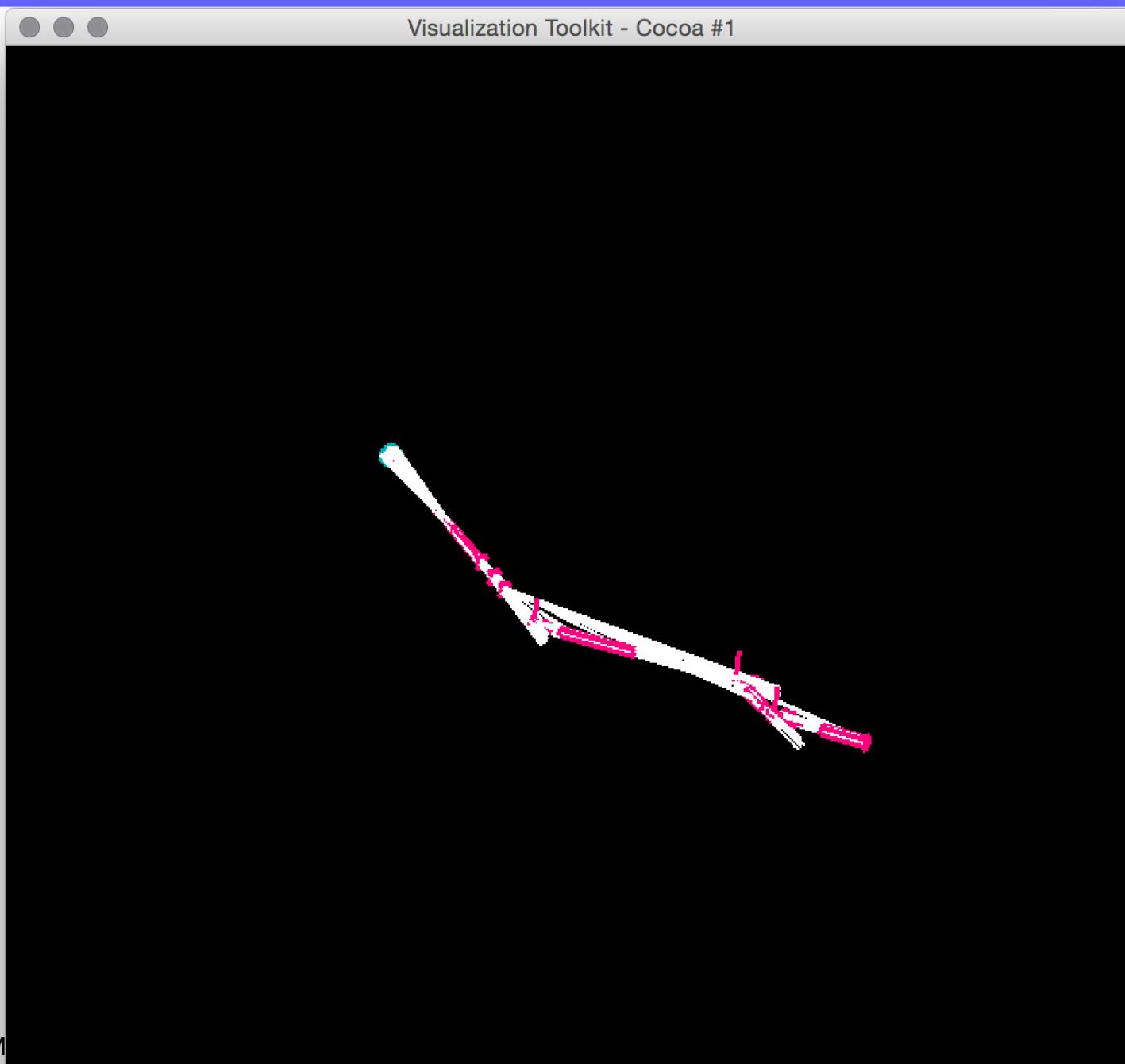


mcdisplay-vtk-py



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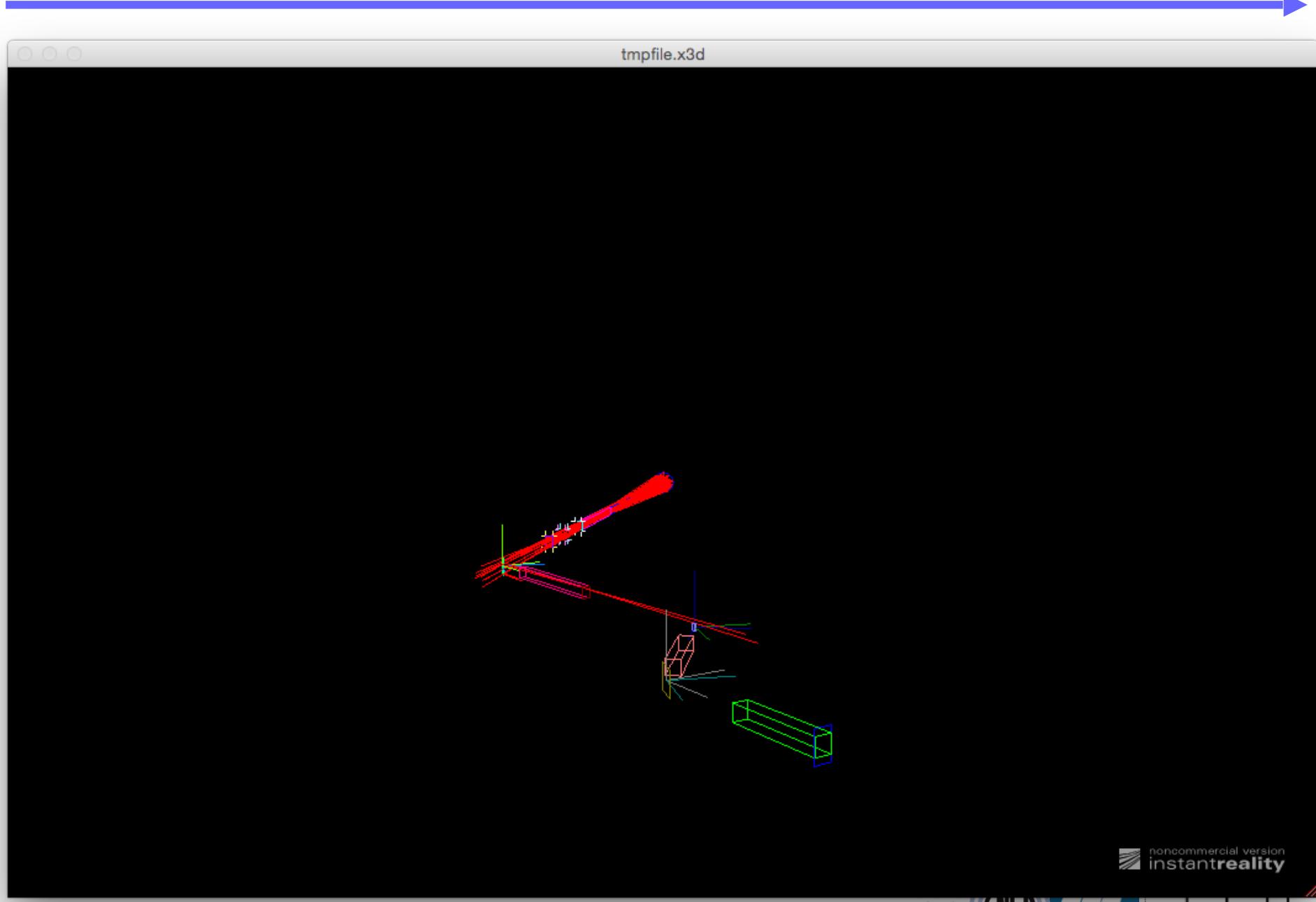


mcdisplay-x3d-py



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noncommercial version
instantreality

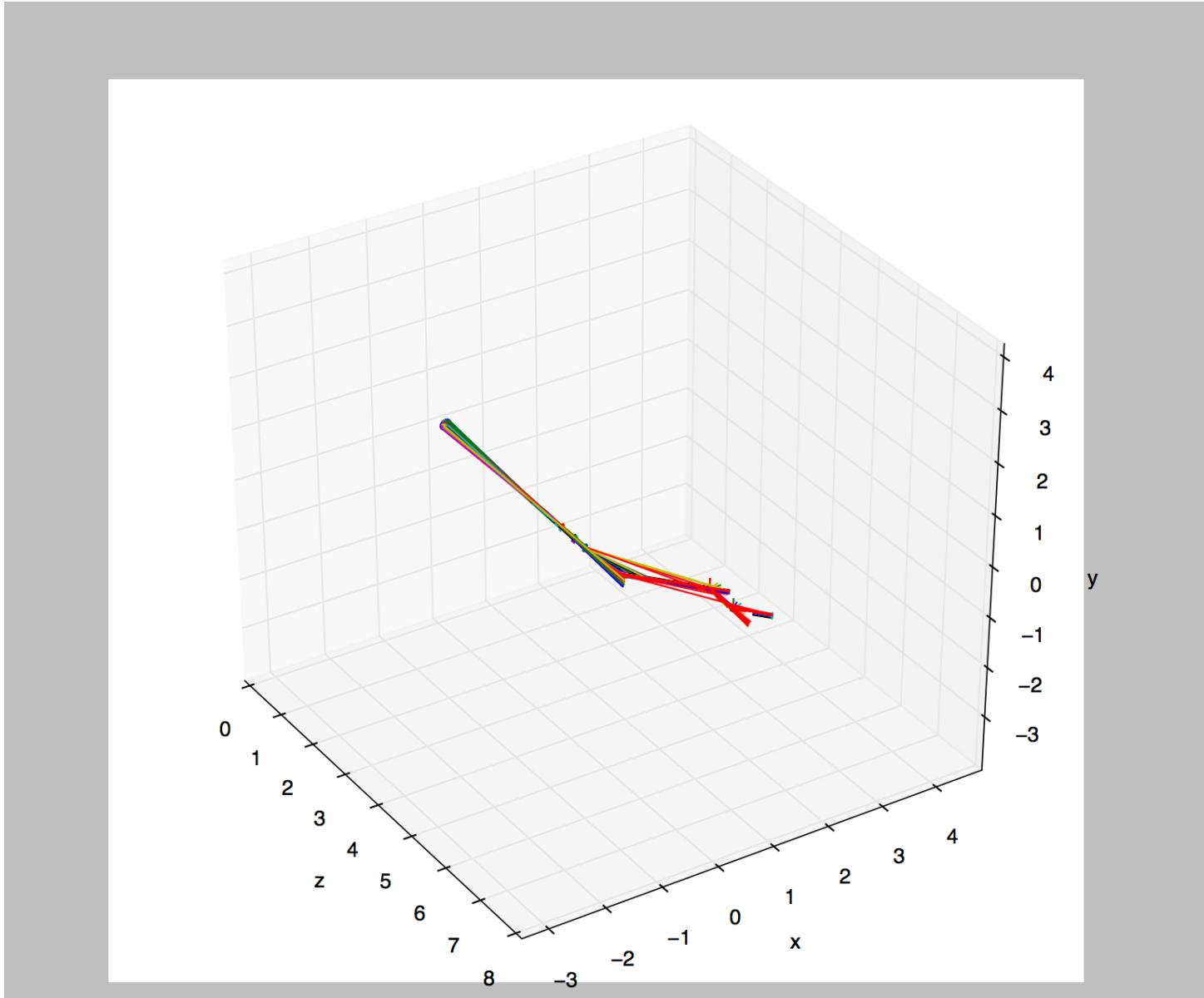


mcdisplay --format=VRML



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Web interface @ e-neutrons.org

sim.e-neutrons.org

Logged in as pwillendrup (see recent simruns) Logout

SANSsimple (click for documentation)

Instrument layout

Parameters for SANSsimple

pinhole_rad [m] :	0.004	radius of the collimating pinholes (0.004)
LC [m] :	3	length of the collimator – distance between pinholes (3)
LD [m] :	3	distance between the last pinhole slit and detector (3)
Lambda [Angs] :	6	Average wavelength traced from source (6)
DLambda [Angs] :	0.6	Wavelength band +/- traced from source (0.6)
R [AA] :	400	radius of the hard, monodisperse spheres in the sample (400)
dR [AA] :	0	Normal variance of Radius (0)
PHI [1] :	0.01	Volumefraction of the hard, monodisperse spheres in the sample (0.01)
Delta_Rho [fm/AA^3] :	0.6	Volume specific scattering length density contrast of the hard, monodisperse spheres in the sample as compared to the solution (0.6)
Qmax [AA^-1] :	0.3	Maximum scattering vector allowed by geometry to hit the detector area (0.3)
BEAMSTOP [0/1] :	1	If set, the beamstop is inserted in front of the detector in order to block the transmitted beam (1)
SAMPLE [0/1] :	1	If set, a sample of spheres or spherical shells is inserted (1)

Runtime configuration

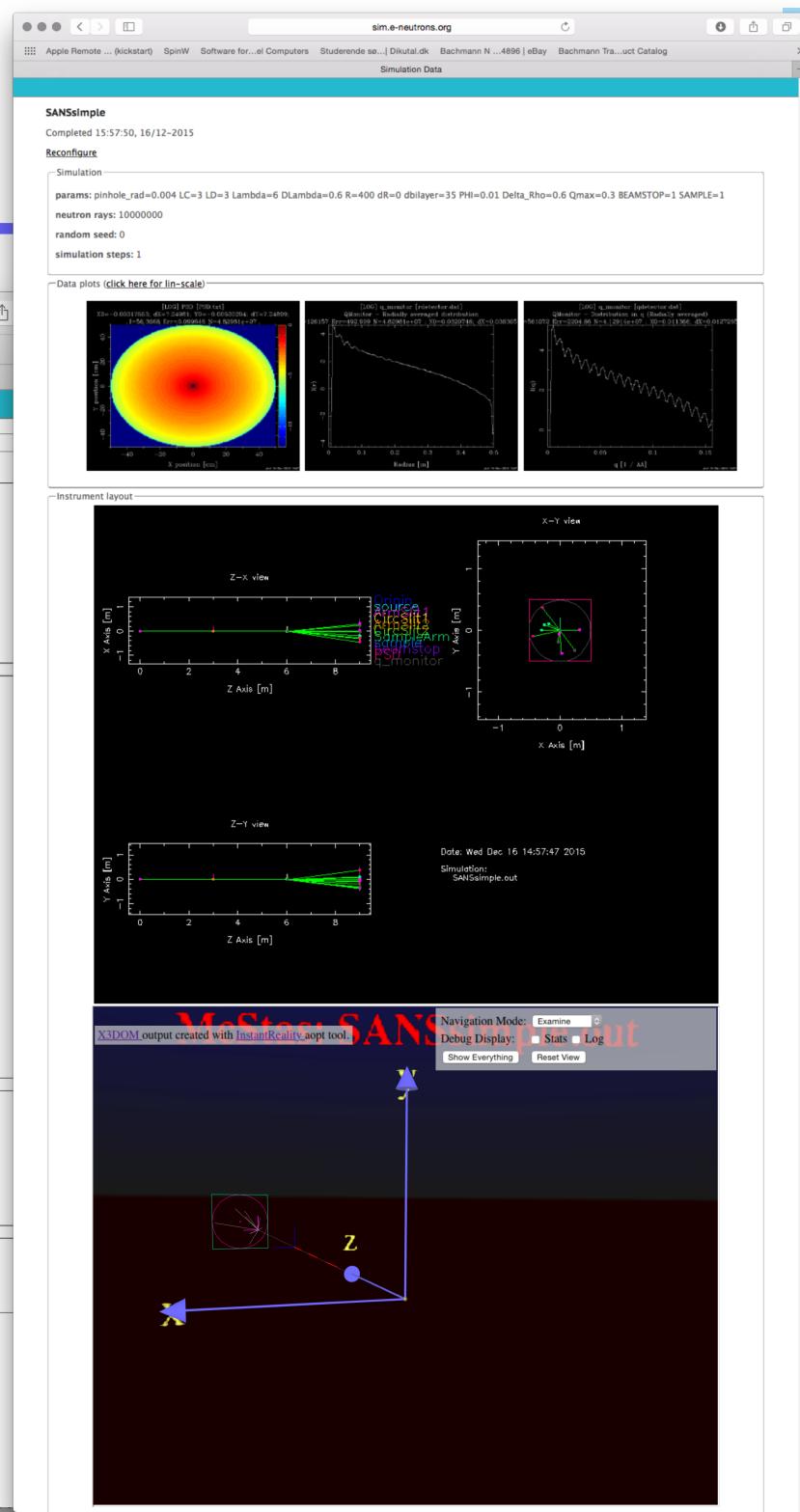
neutron rays:	1000000
simulation steps:	1
random seed:	0

Start simulation run

Run

A web-based interface for McStas.

All contents is provided under the terms of



Web interface @ e-neutrons.org

sim.e-neutrons.org

Logged in as pwillendrup (see recent simruns) Logout

SANSsimple (click for documentation)

Instrument layout

Parameters for SANSsimple

pinhole_rad [m]:	0.004	radius of the collimation pinholes (0.004)
LC [m]:	3	length of the collimation slits (3)
LD [m]:	3	distance between the sample and the detector (3)
Lambda [Angs]:	6	Average wavelength (6 Angstroms)
DLambda [Angs]:	0.6	Wavelength spread (0.6 Angstroms)
R [AA]:	400	radius of the hard, monodisperse spheres in the sample (400)
dR [AA]:	0	Normal variance of Radius (0)
PHI [1]:	0.01	Volumefraction of the hard, monodisperse spheres in the sample (0.01)
Delta_Rho [fm/AA^3]:	0.6	Volume specific scattering length density contrast of the hard, monodisperse spheres in the sample as compared to the solution (0.6)
Qmax [AA^-1]:	0.3	Maximum scattering vector allowed by geometry to hit the detector area (0.3)
BEAMSTOP [0/1]:	1	If set, the beamstop is inserted in front of the detector in order to block the transmitted beam (1)
SAMPLE [0/1]:	1	If set, a sample of spheres or spherical shells is inserted (1)

Runtime configuration

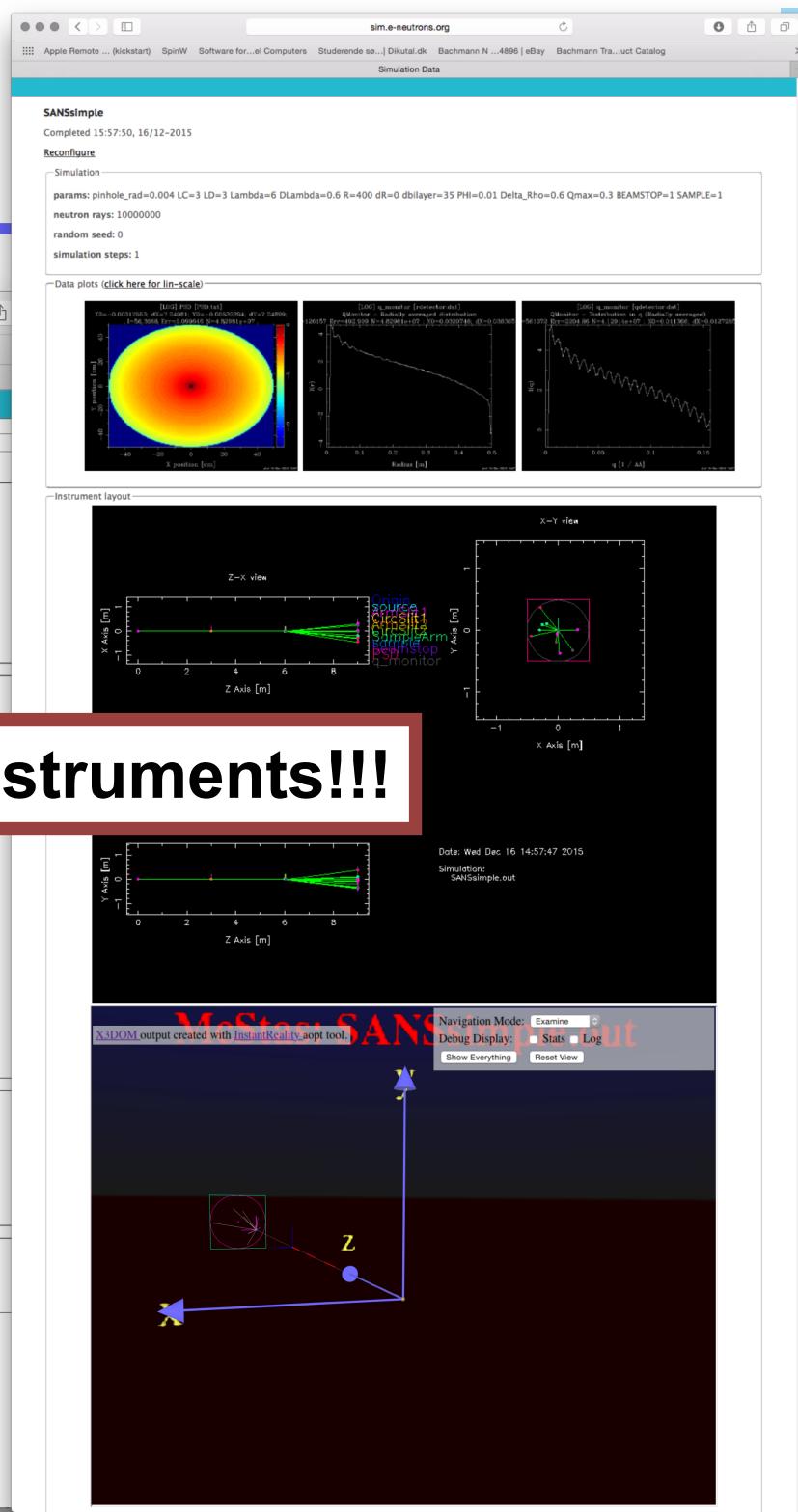
neutron rays:	1000000
simulation steps:	1
random seed:	0

Start simulation run

Run

A web-based interface for McStas.

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Web interface @ e-neutrons.org



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FRONTPAGE ABOUT E-NEUTRONS FOR TEACHERS GET AN ACCOUNT

Username: pwillendr Password: Login

Courses

Introduction to Neutron Scattering
High-guidance self study

Introduction to Neutron Scattering
Open course for blended learning

Muon Spin Spectroscopy
A course on a complementary technique to neutron scattering

INTRODUCTION TO NEUTRON SCATTERING - SELF STUDY
This course contains 10 high-guidance modules on master-level physics.
Each module takes approximately 10-20h to complete.

READ MORE

Science cases

Finding crystal structure
Chemistry of materials

Characterising liposomes in suspension
Life sciences

Characterising magnetic order
Magnetic and electronic phenomena

CRYSTAL STRUCTURE
Try module "Diffraction from crystalline materials" in course "Introduction to Neutron Scattering"

READ MORE

Exercise taster

FOURIER TRANSFORM
Do you know what the scattering intensity is from a string of particles?
Test yourself here!

READ MORE

Quiz taster

NEUTRON PROPERTIES
Do you know what neutrons are good for and why? Test yourself here...

READ MORE

Simulation taster

SMALL ANGLE SCATTERING
Do you know what the scattering pattern looks like from small particles in solution?
Test yourself here...

READ MORE

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FRONTPAGE ABOUT E-NEUTRONS FOR TEACHERS GET AN ACCOUNT

Username: pwillendr Password: Login

Paul Scherrer Institut
PSI

Web interface @ e-neutrons.org

The screenshot displays the e-neutrons.org website with several key features:

- Header:** Includes the e-neutrons logo, navigation links (FRONTPAGE, ABOUT E-NEUTRONS, FOR TEACHERS, GET AN ACCOUNT), and a login form.
- Left Column (Courses):** Lists three courses:
 - Introduction to Neutron Scattering**: High-guidance self study.
 - Introduction to Neutron Scattering**: Open course for blended learning.
 - Muon Spin Spectroscopy**: A course on a complementary technique to neutron scattering.
- Right Column (Science cases):** Shows two examples:
 - Finding crystal structure**: Chemistry of materials.
 - Characterising liposomes in suspension**: An intensity plot labeled (a) showing concentric rings with a color scale from 0 to 160.
- Central Callout:** A large red-bordered box contains the text "Online-course on neutron scattering available!".
- Bottom Sections (Tasters):**
 - Exercise taster**: A problem titled "Fourier transform" with a question about scattering intensity.
 - Quiz taster**: A question about neutron properties with a "READ MORE" button.
 - Simulation taster**: A simulation for "SMALL ANGLE SCATTERING" with parameters like radius, length, and distance.
- Top Right Corner:** Features the "McStas School Argentina" logo and the date "15-19th FEBRUARY 2016".

Web interface @ e-neutrons.org



The screenshot shows a web browser window with the URL "e-neutrons.org" in the address bar. The page has a teal header with the "e-neutrons" logo, navigation links for "FRONTPAGE", "ABOUT E-NEUTRONS", "FOR TEACHERS", and "GET AN ACCOUNT", and a login form with fields for "Username" (containing "pwillendru") and "Password" (containing "*****"). A blue arrow points from the top right towards the right edge of the browser window.

The available selection of courses is visible at this [Moodle page](#). The list below uses the "short" naming convention for courses, i.e.

- ns-intro="Introduction to neutron scattering"
- ns-intro-selfstudy="Introduction to neutron scattering – self study"
- musr="Introduction to muon spin resonance"

Please fill in the form, indicating your personal data and requested courses.

If you have an account already and want to change your password, please visit our [Password change service](#)

Please avoid special characters like the Danish æ,ø and å in this prototype

I'm not a robot reCAPTCHA
Privacy - Terms

First Name:

Last Name:

Email:

Requested username:

intro-ns-selfstudy
 intro-ns
 musr

Web interface @ e-neutrons.org



15th-19th
FEBRUARY
2016

The screenshot shows a web browser window for e-neutrons.org. The header includes a navigation bar with links like "FRONTPAGE", "ABOUT E-NEUTRONS", "FOR TEACHERS", and "GET AN ACCOUNT". Below the header is a login form with fields for "Username" (containing "pwillendru") and "Password" (containing "*****"). A "Login" button is to the right. To the left of the login form is a "reCAPTCHA" box with the text "Please avoid special characters". A large red rectangular box highlights the text "Free subscription!!". The page content below the header discusses course selection and provides a link to a Moodle page. At the bottom, there is a "I'm not a robot" checkbox and a "reCAPTCHA" image. Form fields for "First Name", "Last Name", "Email", and "Requested username" are present, along with checkboxes for course requests: "intro-ns-selfstudy", "intro-ns", and "musr". A "Submit" button is at the bottom right. A blue arrow points from the top right towards the right edge of the browser window.

The available selection of courses is visible at this [Moodle page](#). The list below uses the "short" naming convention for courses, i.e.

- ns-intro="Introduction to neutron scattering"
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Please fill in the form, indicating your personal data and requested courses.

If you have an account already and want to change your password, please visit our [Password change service](#)

Please avoid special characters

Free subscription!!

I'm not a robot

reCAPTCHA

Privacy - Terms

First Name:

Last Name:

Email:

Requested username:

intro-ns-selfstudy

intro-ns

musr

Submit