McStas web interface

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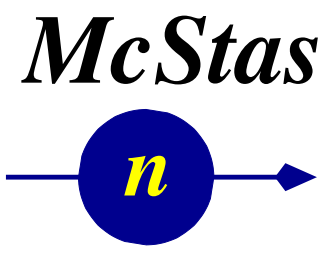

Outline

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2. Design
3. Example 1: Simple simulation
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5. Features

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Motivation

- Students can focus on simulating and ignore the system details. Few steps from configuration to results.

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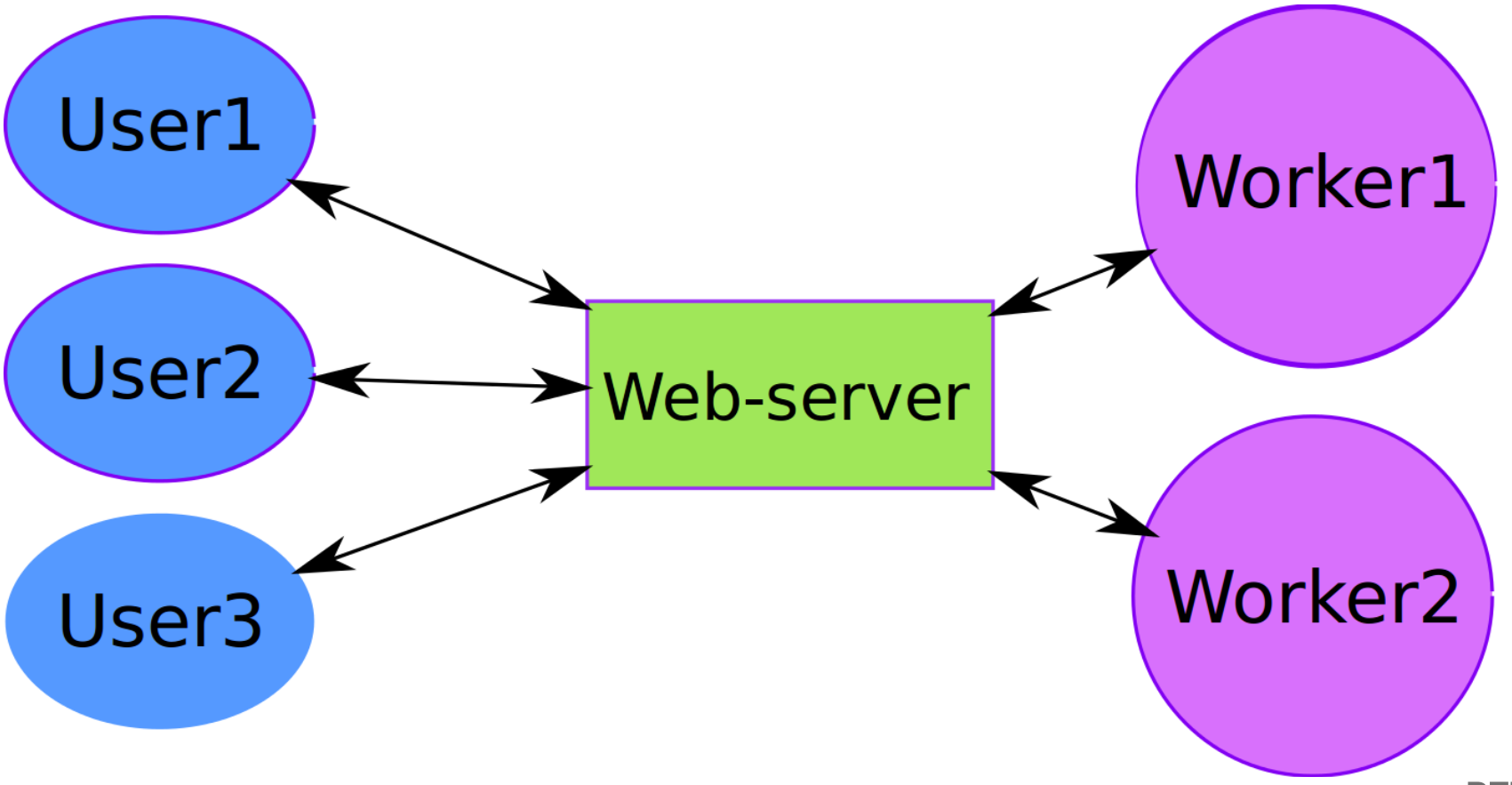
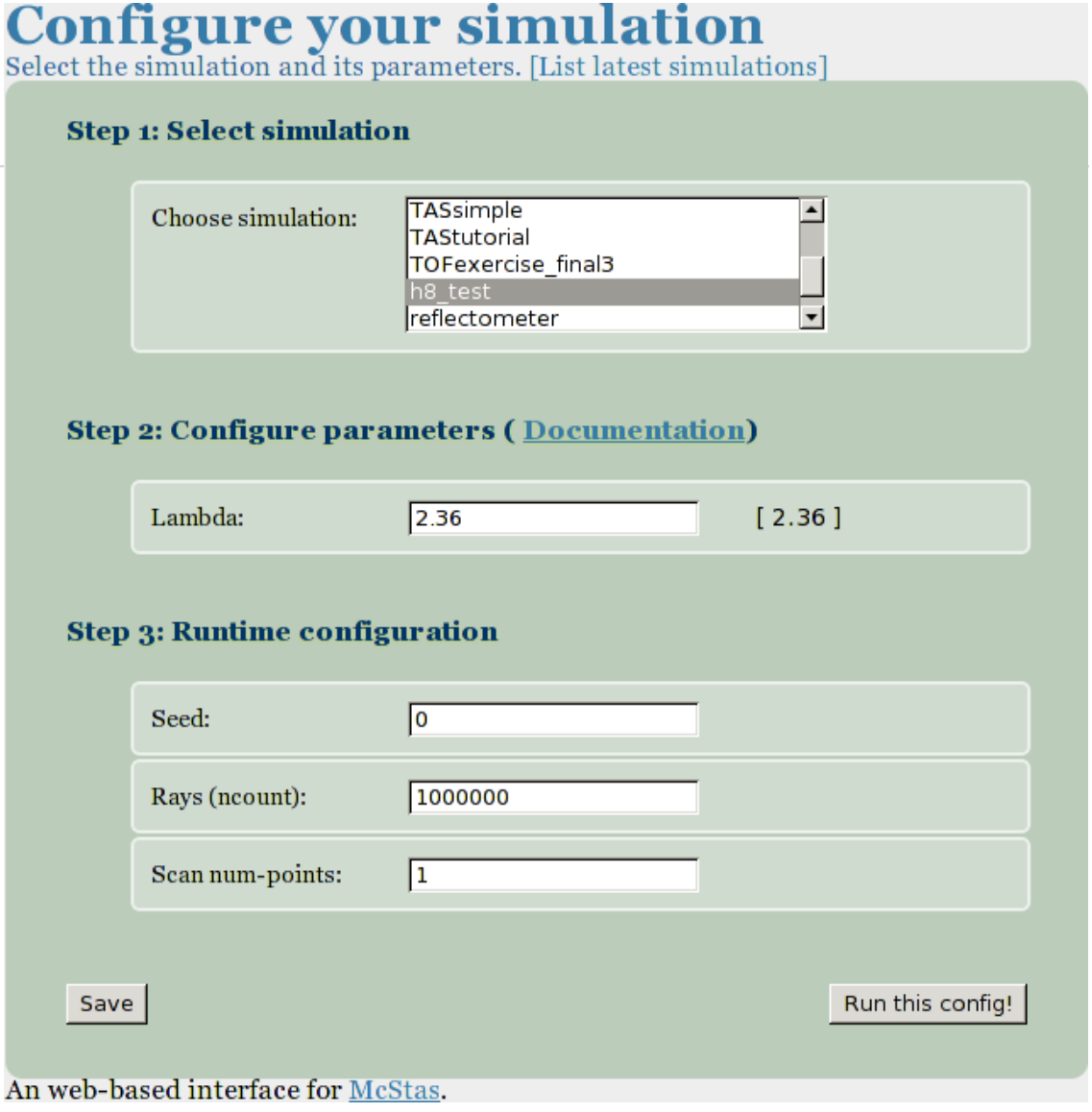
- Easy to share results and collaborate, as the simulation data is hosted on the server.
- Simple front-end for an advanced system; the server may run the simulation on multiple cores via MPI.

Design: Many to Many



Example 1: Simple simulation

- Configuration
  - Instrument
  - Parameters
  - Neutron rays
- Simulation ... (on the server)
- Results!
  - Plots
  - Data files
  - Instrument design drawing

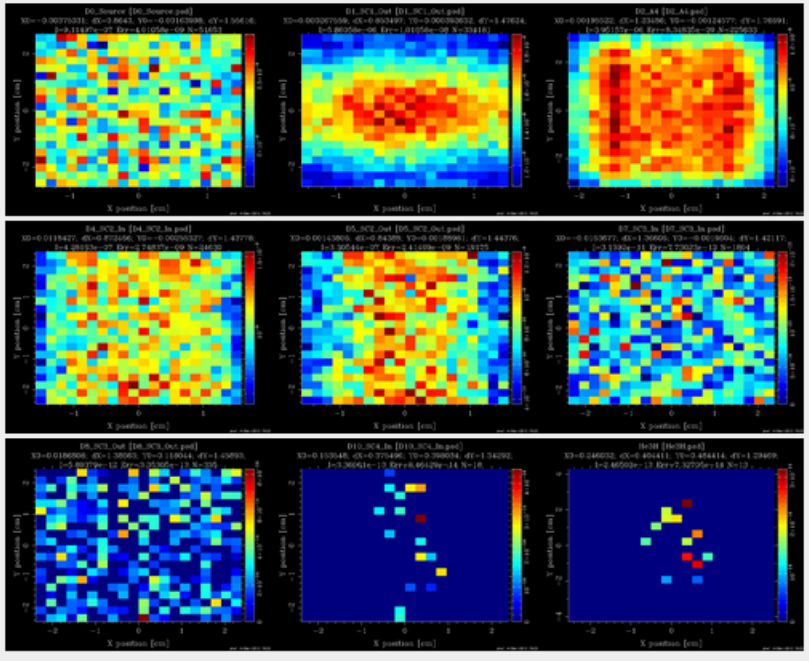

Configure your simulation
Select the simulation and its parameters. [List latest simulations]
Step 1: Select simulation
Choose simulation:
TASsimple
TAStutorial
TOFexercise_final3
h8_test
reflectometer
Step 2: Configure parameters (Documentation)
Lambda:
2.36
[2.36]
Step 3: Runtime configuration
Seed:
0
Rays (ncount):
1000000
Scan num-points:
1
Save
Run this config!
An web-based interface for McStas.

mcstas-02.risoe.dk/sim/status/47hJ0OQ4rfJGBO1m8ZHp__2012-12-04_15:23:12.648550

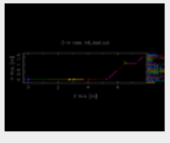
h8_test: 2012-12-04 15:16:35

Lambda=2.36
(reconfigure)

Data plots [LIN] (click here for logarithmic - or press 'L')



Instrument layout

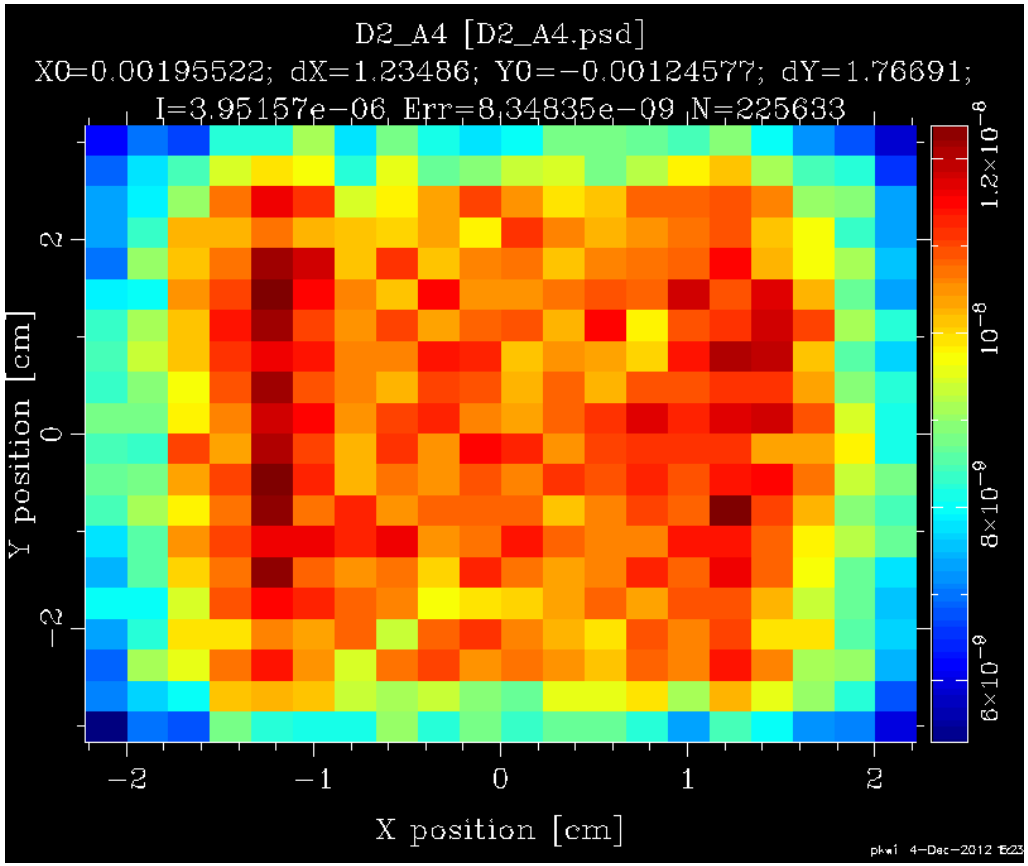


layout.wrl

Simulation output

mcstas.tar.gz h8_test.instr stdout stderr

An web-based interface for McStas.


D2_A4 [D2_A4.psd]
X0=0.00195522; dX=1.23486; Y0=-0.00124577; dY=1.76691;
I=3.95157e-06 Err=8.34835e-09 N=225633
Y position [cm]
X position [cm]
-2
-1
0
1
2
1.2×10⁻⁸
10⁻⁸
8×10⁻⁹
6×10⁻⁹
pkwi 4-Dec-2012

Example 2: Scanning a parameter

- Configuration, like before *plus*:
  - *Parameter intervals to scan over (min and max values)*
  - *Number of points to try within the intervals*
- Simulation ... (on the server)
- Results!
  - *Scan point to look at*
  - Plots
  - Data files
  - Instrument design drawing

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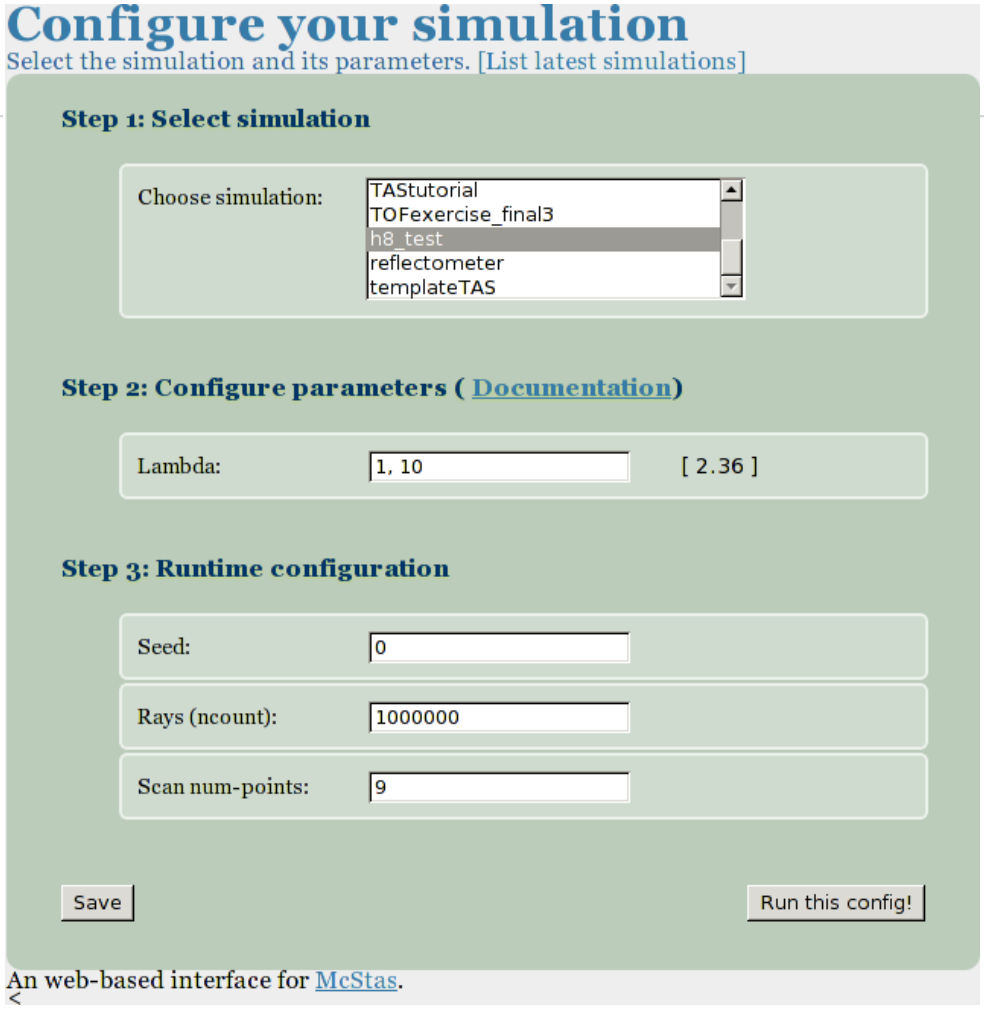
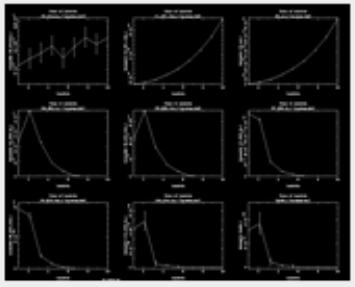

Configure your simulation
Select the simulation and its parameters. [List latest simulations]
Step 1: Select simulation
Choose simulation:
TAStutorial
TOFexercise_final3
h8_test
reflectometer
templateTAS
Step 2: Configure parameters (Documentation)
Lambda:
1, 10
[2.36]
Step 3: Runtime configuration
Seed:
0
Rays (ncount):
1000000
Scan num-points:
9
Save
Run this config!
An web-based interface for McStas.

mcstas-02.risoe.dk/sim/status/47hJ0OQ4rfJGBO1m8ZHp__2012-12-04_16:02:30.373950

h8_test: 2012-12-04 15:16:35

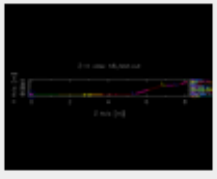
Lambda=[1.0, 10.0]
(reconfigure)

Data plots [LIN] (click here for logarithmic - or press 'L')



D0_Source.psd D1_SC1_Out.psd D2_A4.psd D4_SC2_In.psd
D5_SC2_Out.psd D7_SC3_In.psd D8_SC3_Out.psd D10_SC4_In.psd
He3H.psd

Instrument layout



layout.wrl

Simulation output

mcstas.tar.gz h8_test.instr stdout stderr

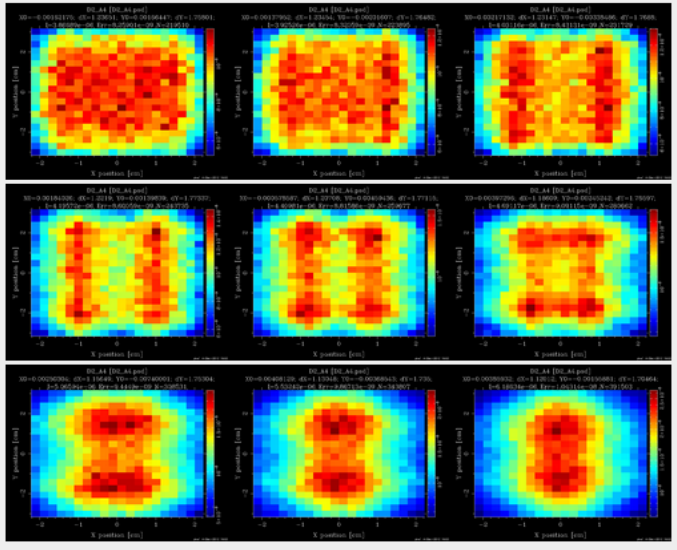
An web-based interface for McStas.

mcstas-02.risoe.dk/sim/status/47hJ0OQ4rfJGBO1m8ZHp__2012-12-04_16:02:30.373950/2

h8_test: 2012-12-04 15:16:35

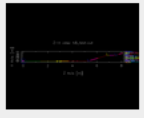
Lambda=[1.0, 10.0]
(reconfigure)

Data plots [LIN] (click here for logarithmic - or press 'L')



D0_Source.psd D1_SC1_Out.psd D2_A4.psd D4_SC2_In.psd
D5_SC2_Out.psd D7_SC3_In.psd D8_SC3_Out.psd D10_SC4_In.psd
He3H.psd

Instrument layout

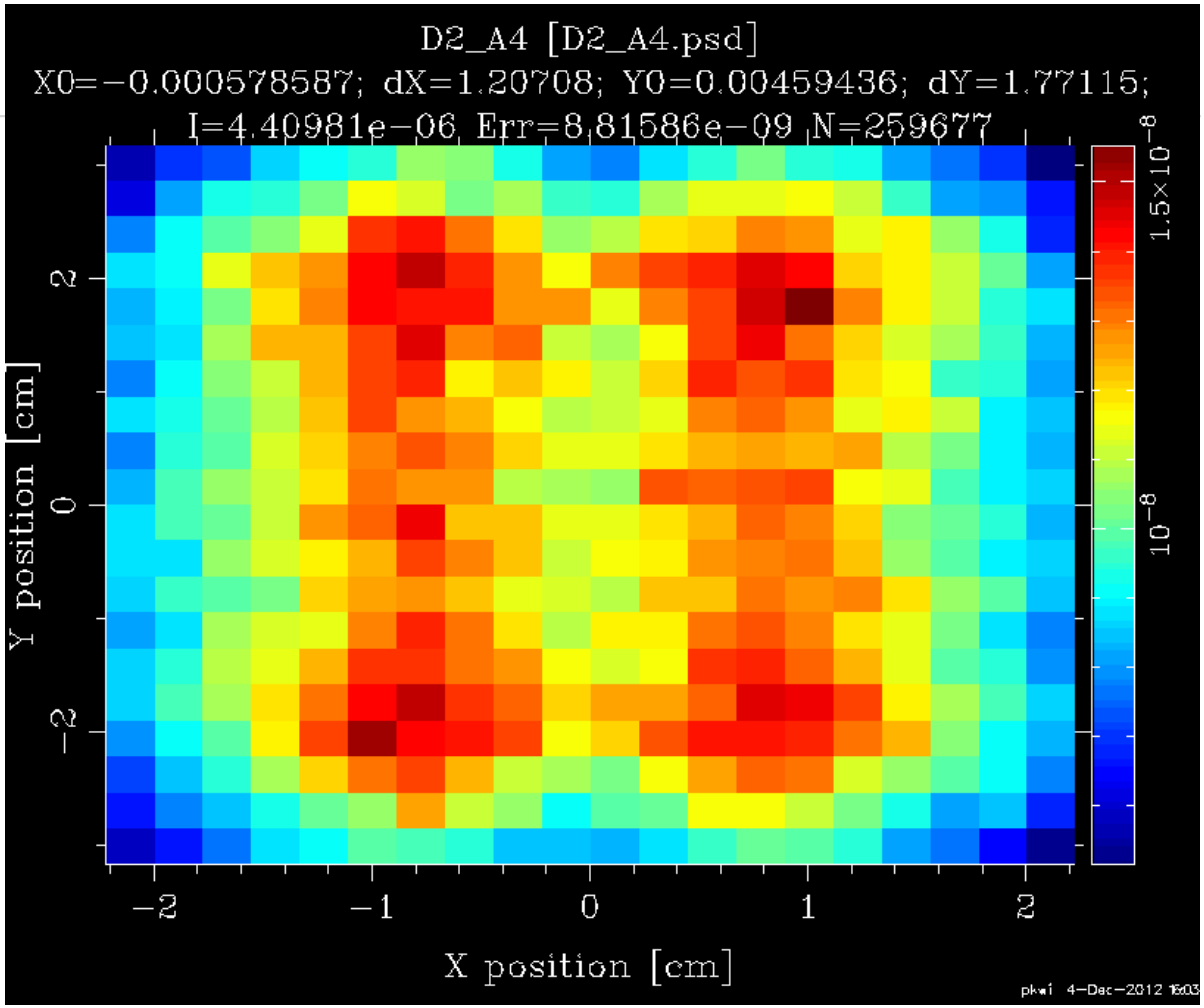


layout.wrl

Simulation output

mcstas.tar.gz h8_test.instr stdout stderr

An web-based interface for McStas.


D2_A4 [D2_A4.psd]
X0=-0.000578587; dX=1.20708; Y0=0.00459436; dY=1.77115;
I=4.40981e-06 Err=8.81586e-09 N=259677
Y position [cm]
X position [cm]
-2
-1
0
1
2
1.5×10^{-8}
10^{-8}
pkwi 4-Dec-2012 16:03

Features

- An easy way to simulating experiments!
- Authentication: only some can run simulations
- Permalinks: All URLs are permanent and can be shared across users
- Easy for the administrator to add new instruments (not yet possible for users)

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Questions?

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