

McStas 1.7

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- Planned modifications / Actual modifications
- New dataformats, new mcplot/mcdisplay backends
- New installation requirements
- TODO before release
- Conclusion

Original plan:

Complete GUI rewrite in Scilab/Tk

However - not mature enough yet for all tasks

New plan:

Get rid of 'hard' PGPLOT/PDL dependence,
keep perl as interfacing layer - new graphical
backends (Matlab/Scilab)



<i>MCSTAS_FORMAT</i>	<i>import data as vars</i>	<i>in-line plot</i>	<i>mcplot</i>	<i>mcdisplay</i>	<i>ext.</i>
<i>McStas/PGPLOT</i>			YES	YES	.sim
<i>Scilab (>=2.6)</i>	YES	YES	YES	YES	.sci/.scg
<i>Matlab (>=5.3)</i>	YES	YES	YES	YES	.m/.fig
<i>IDL</i>	YES	YES			.pro
<i>XML (NeXus)</i>		[browsers]			.xml
<i>HTML</i>		[browsers]			.html

All data blocks may additionally be saved:

- attached inside the simulation file
- as external text or binaries (float/double)
- Matlab, Scilab and IDL data files have in-line plot func.

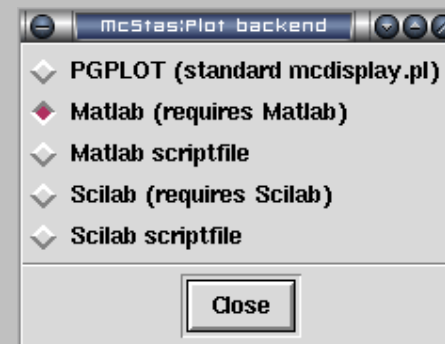
CVS handles protected repository for the project.
A modification creates a new file version
All versions are stored, and accessible

When 'committed'

-  modifications are searched and stored automatically
-  conflicts (many guys have modified the file) are reported

Result: there is always an updated, synchronized, running version

- PGPLOT (legacy backend)
- Matlab / Matlab scriptfile
- Scilab / Scilab scriptfile



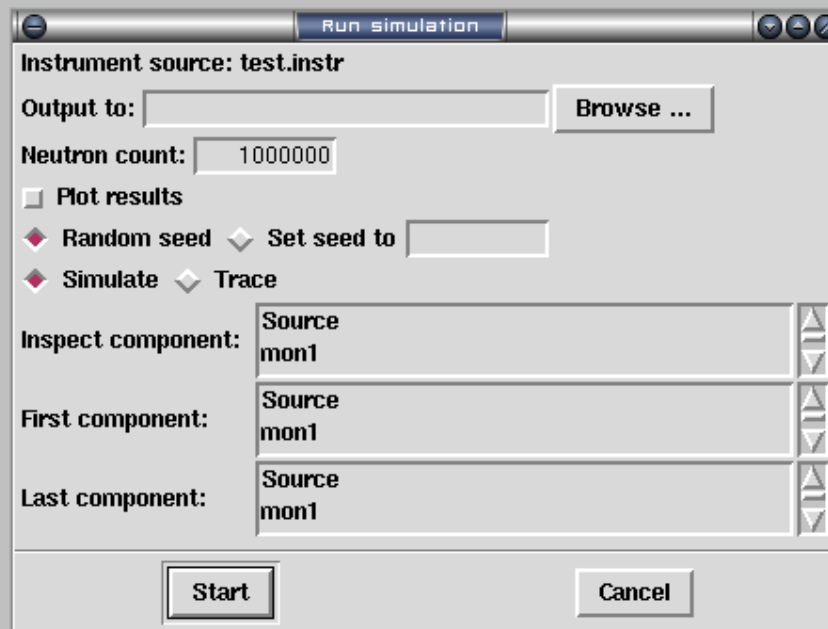
Setting affects

- McStas output format (.sim / .m / .sci)
- Used mcplot backend
- Used mcdisplay (--trace) backend

Setting adjusted using

- config file (mcstas_config.perl)
- Environment variable (MCSTAS_FORMAT)
- Plot backend dialogue

- Inspect component
- First/Last component



Run simulation

Instrument source: test.instr

Output to: Browse ...

Neutron count:

☐ Plot results

◆ Random seed ◆ Set seed to

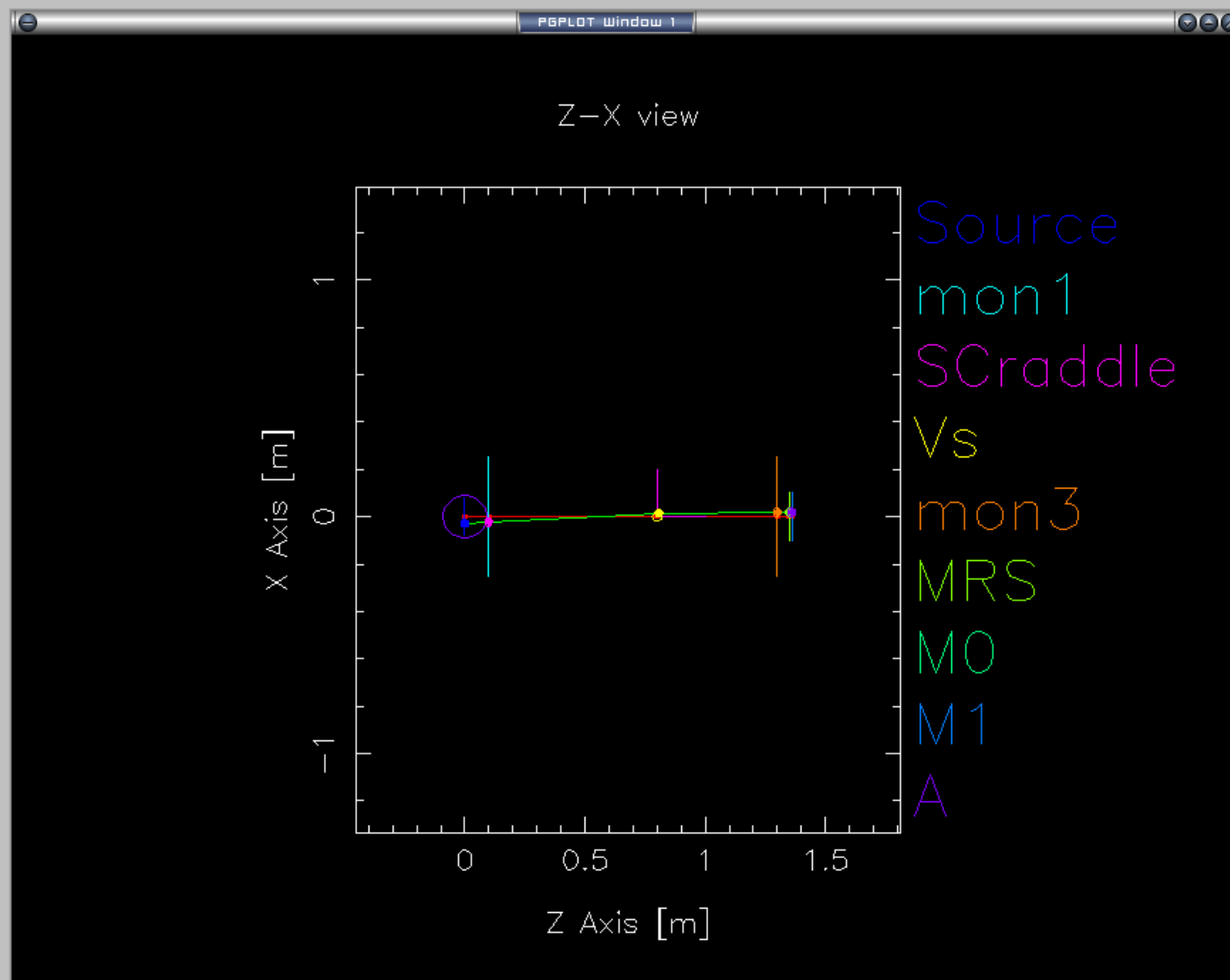
◆ Simulate ◆ Trace

Inspect component: ▲ ▼

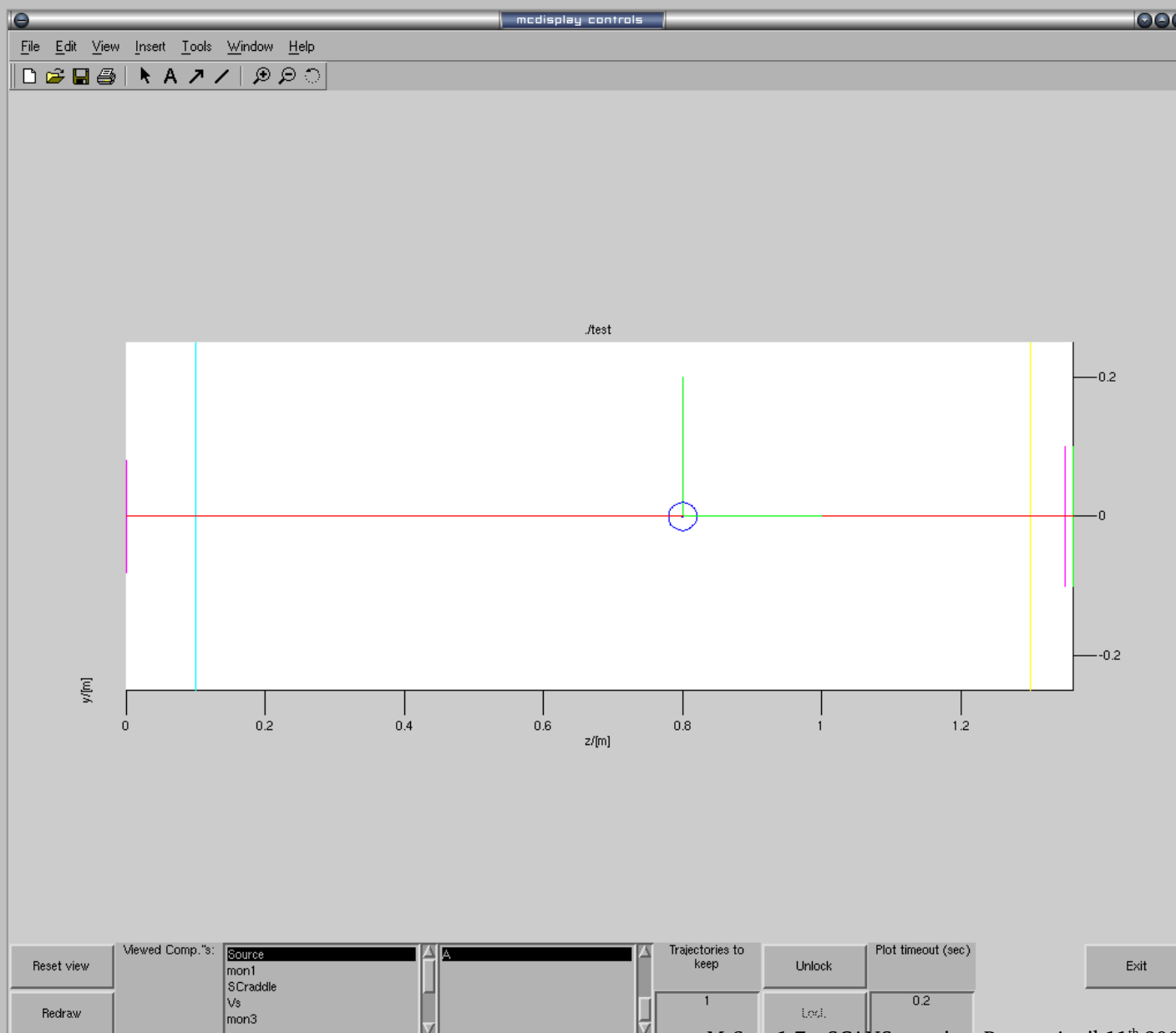
First component: ▲ ▼

Last component: ▲ ▼

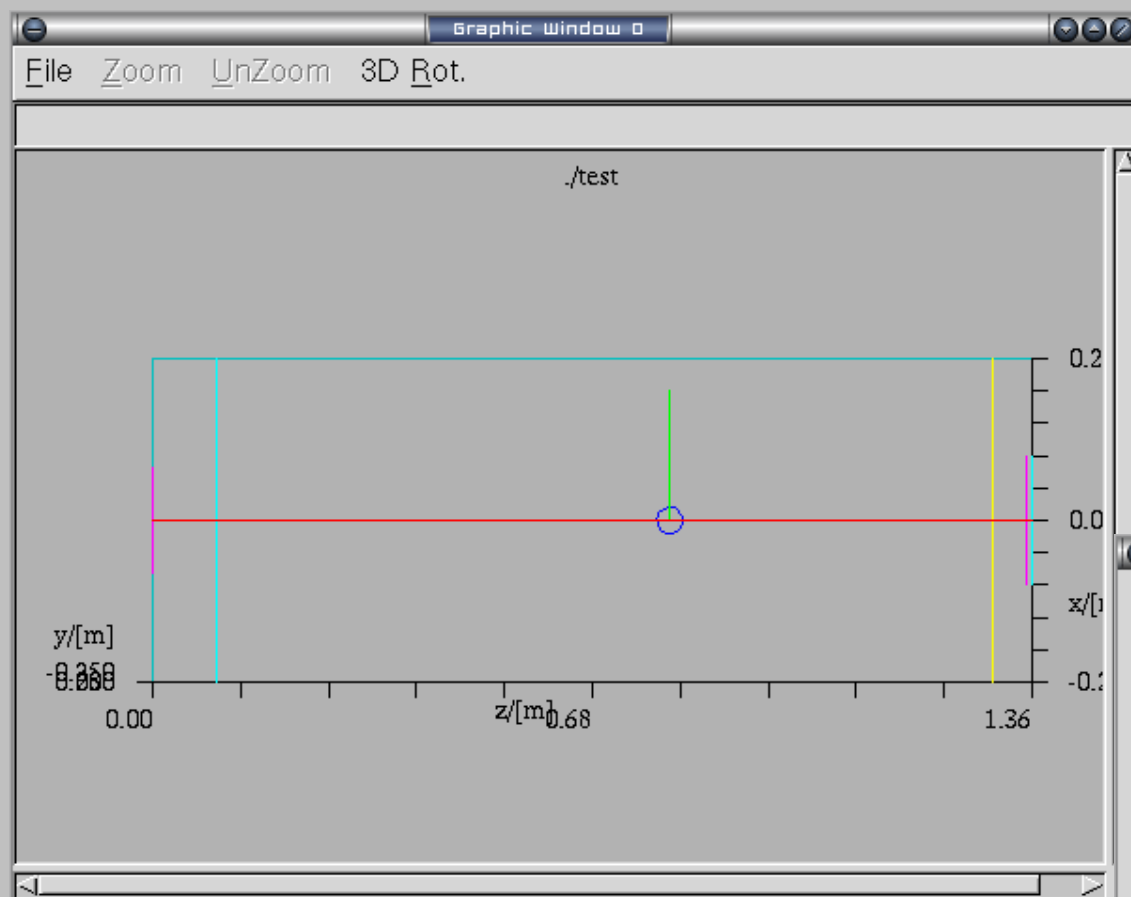
'mcdisplay'



'mcdisplay'



'mcdisplay'



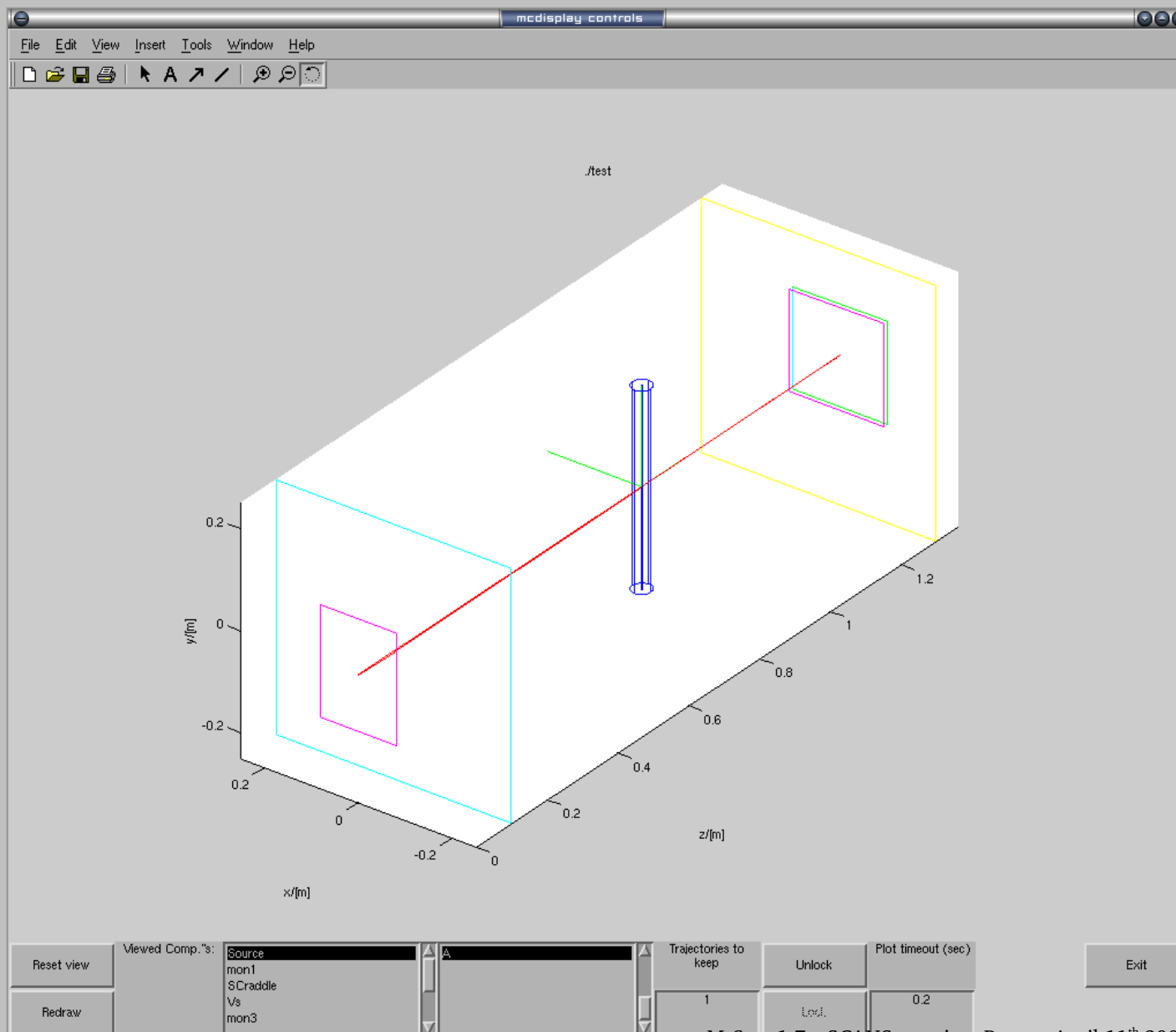
Scilab dialog

PlotInstrument3D

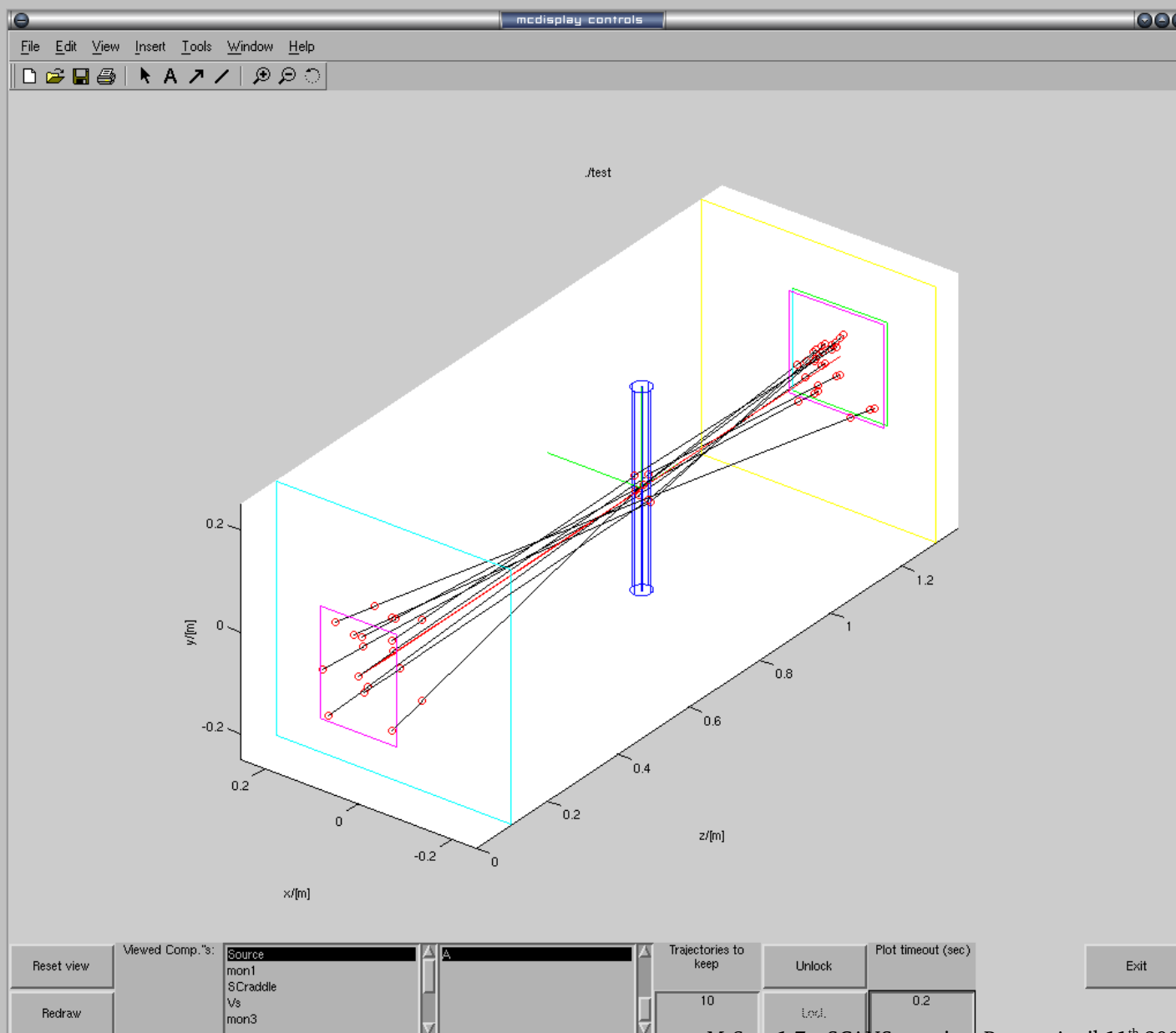
First component	Source	/
Last component	A	/
# neutrons to trace	1	/
alpha	0	/
theta	-90	/
Exit	no	/

OK Cancel

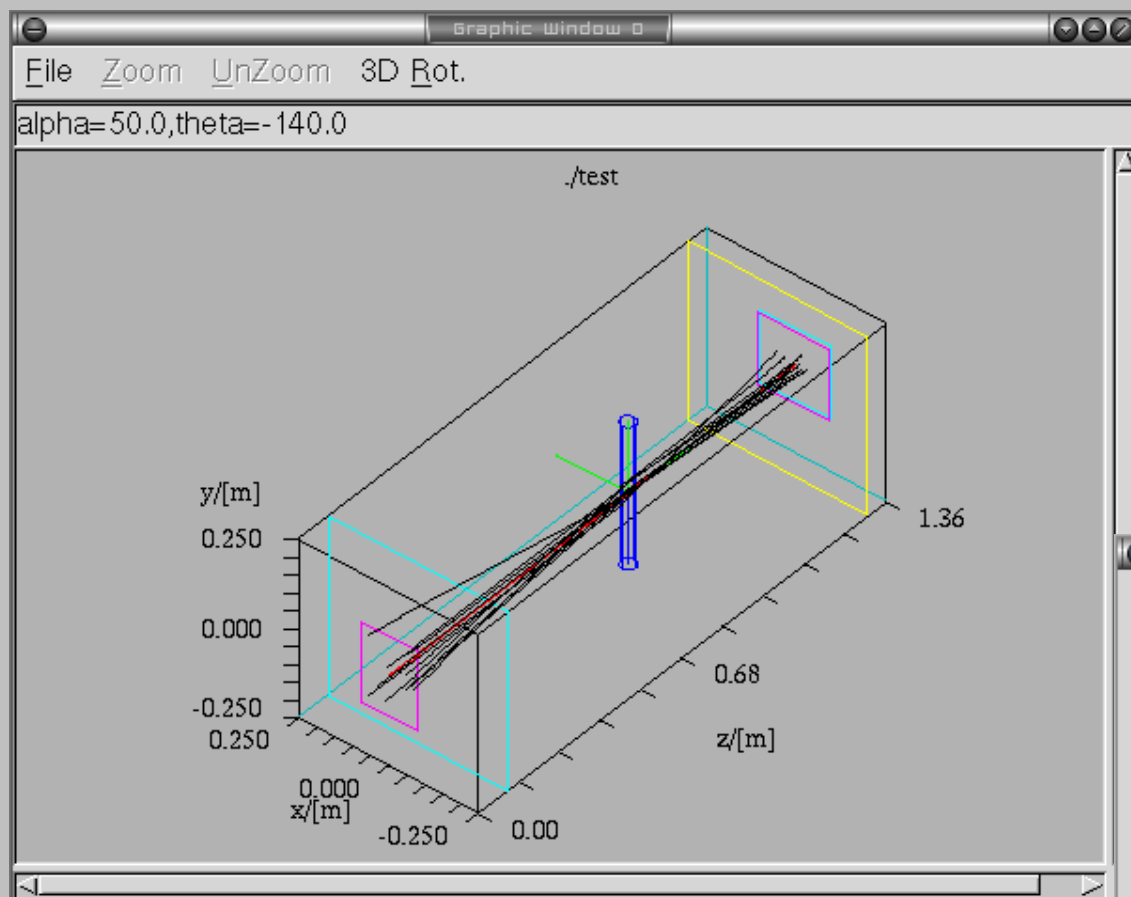
'mcdisplay'



'mcdisplay'



'mcdisplay'



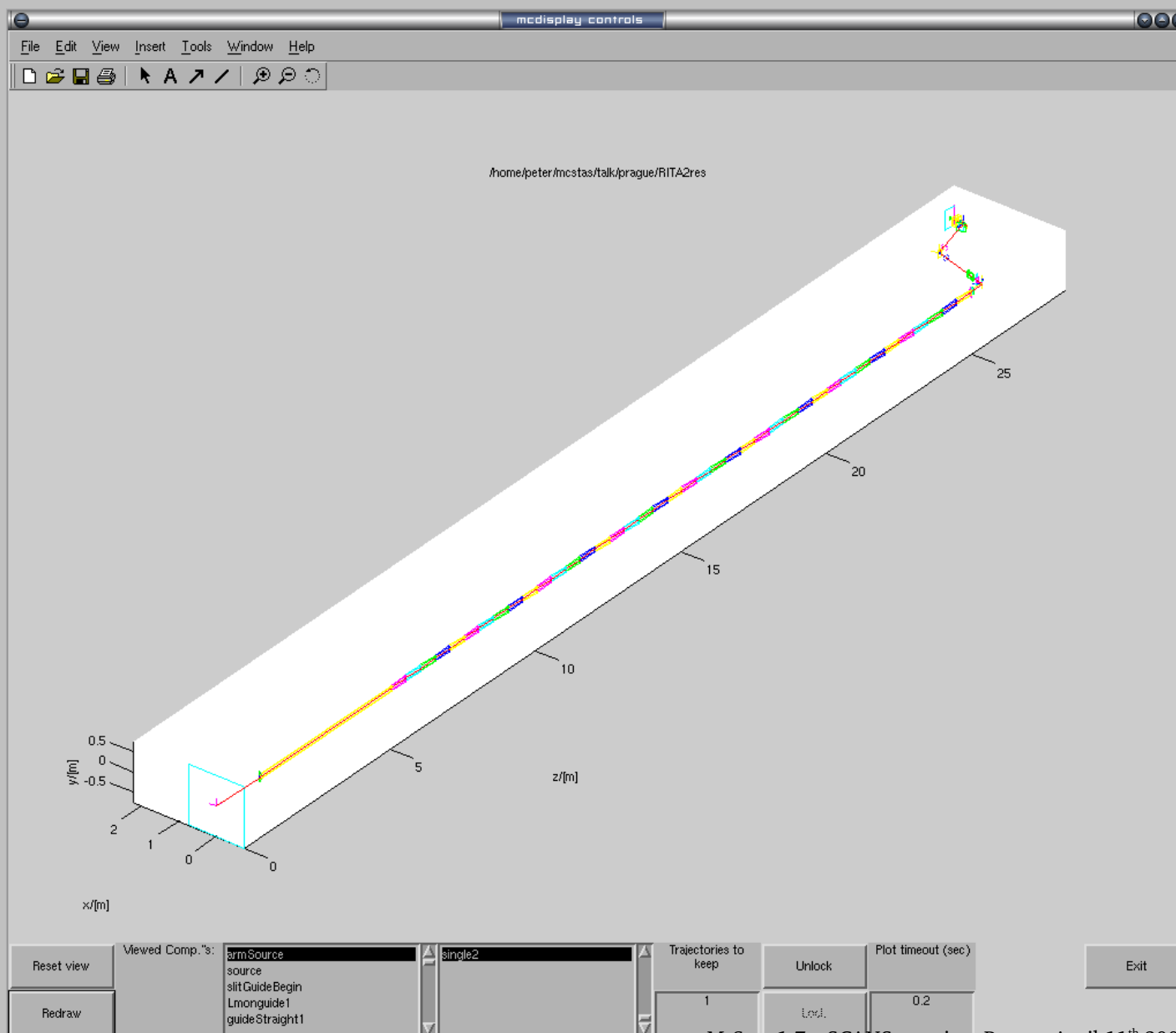
Scilab dialog

PlotInstrument3D

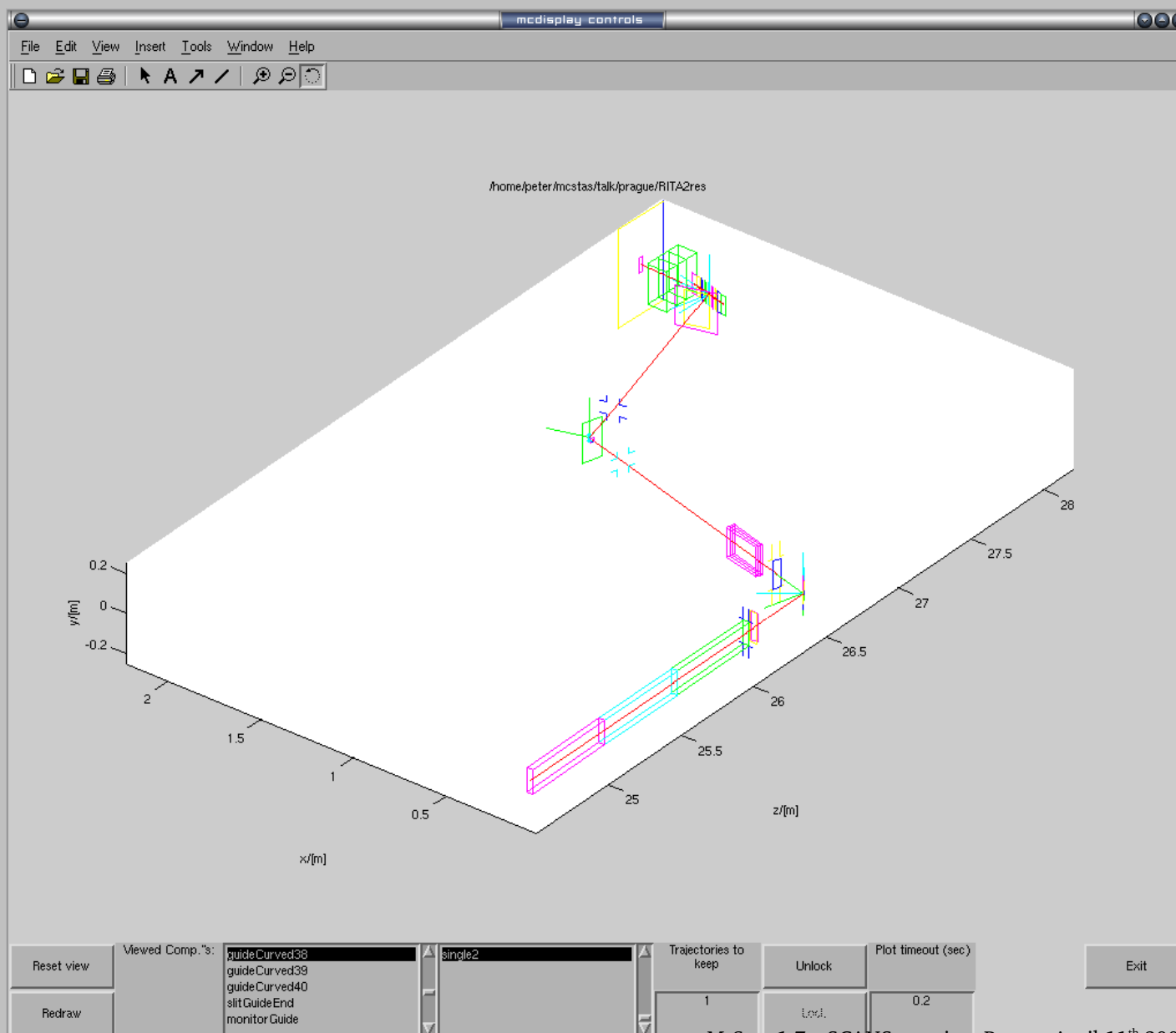
First component	Source	/
Last component	A	/
# neutrons to trace	1	/
alpha	0	/
theta	-90	/
Exit	no	/

OK Cancel

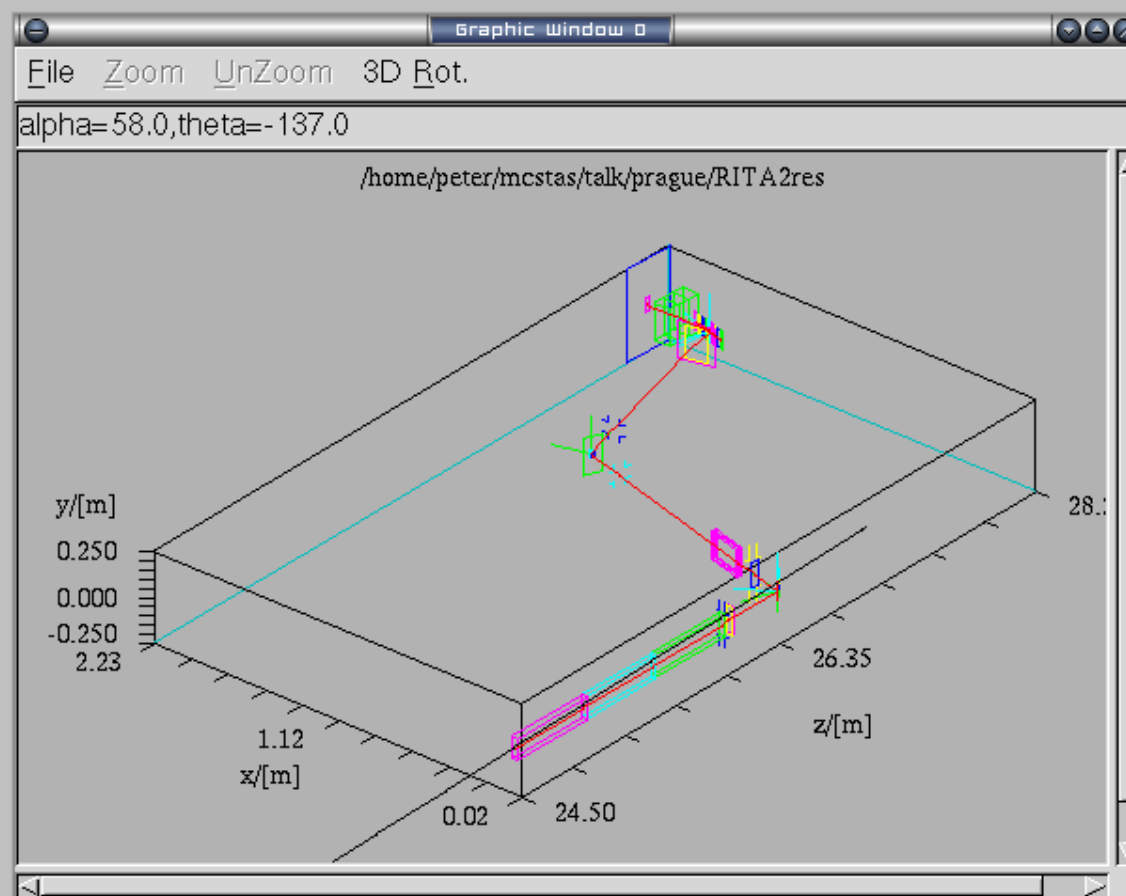
'mcdisplay'



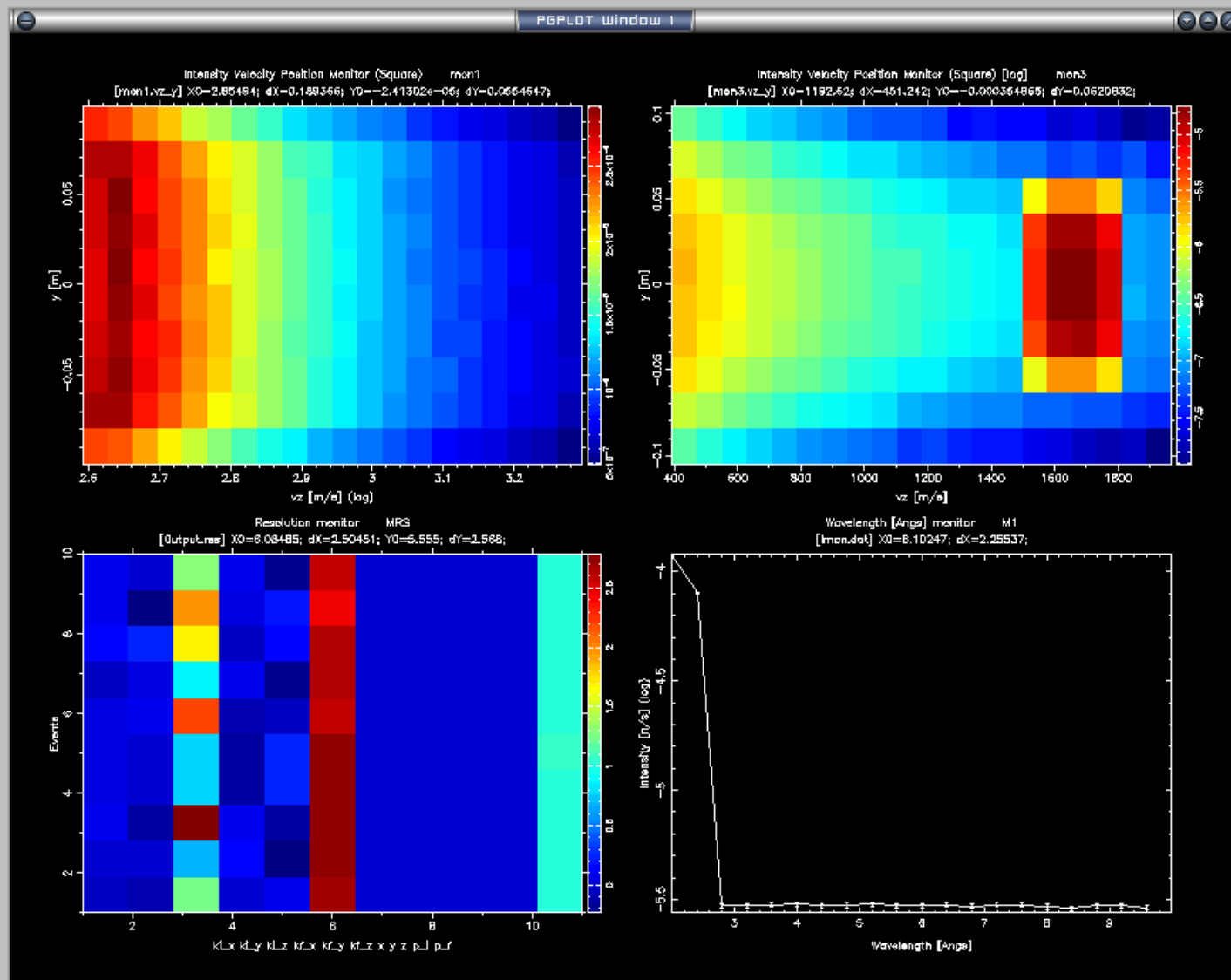
'mcdisplay'



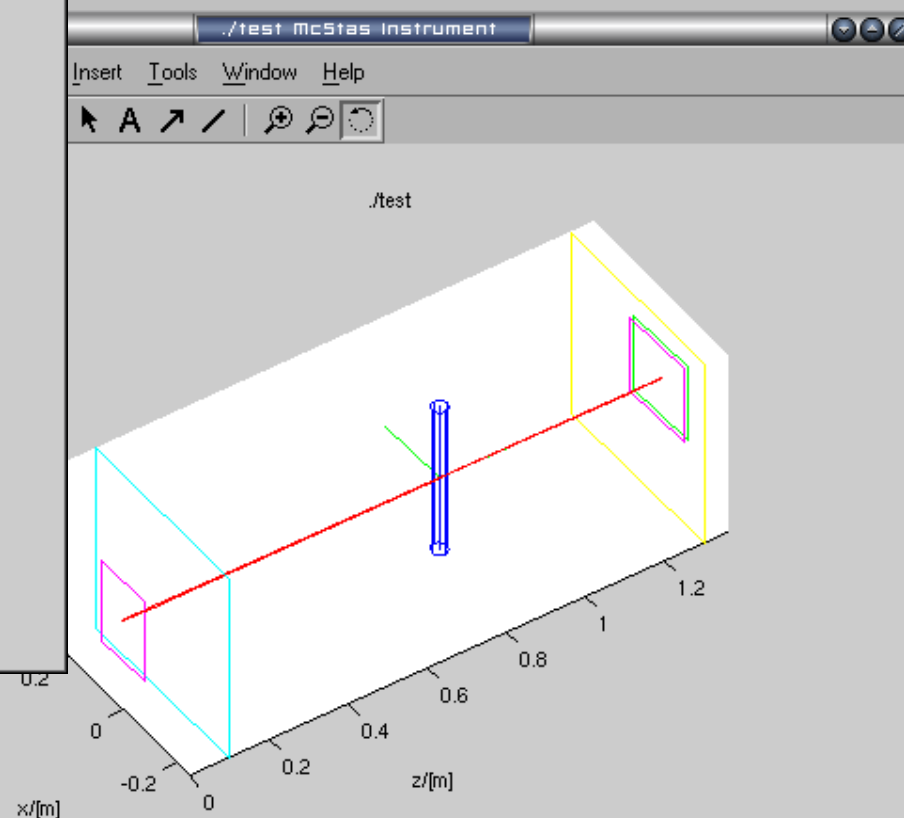
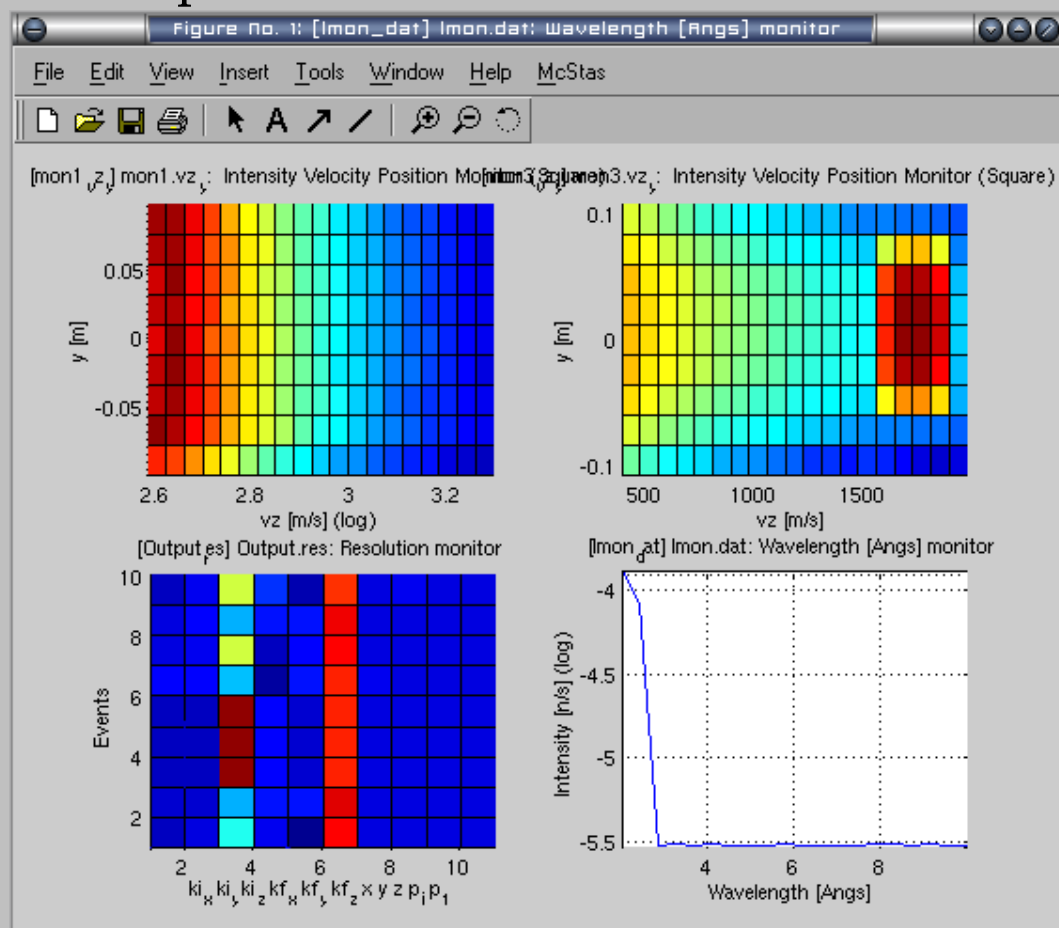
'mcdisplay'



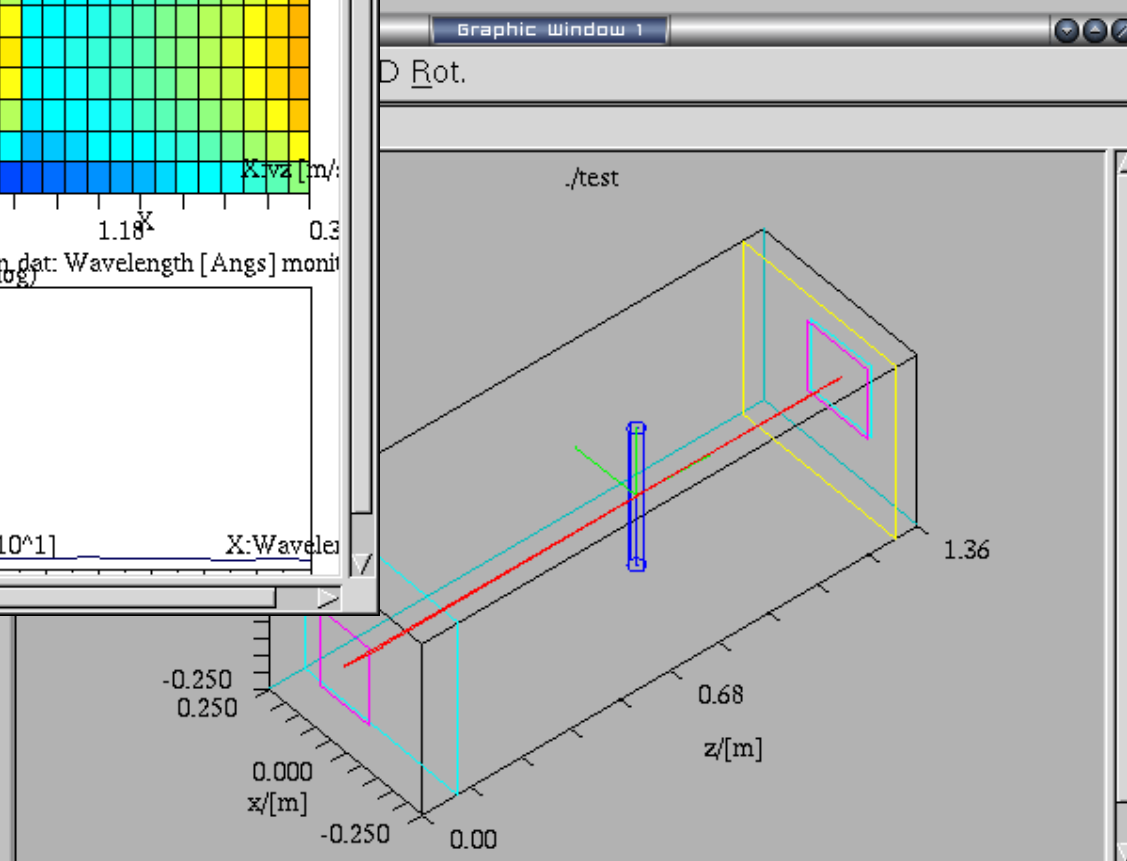
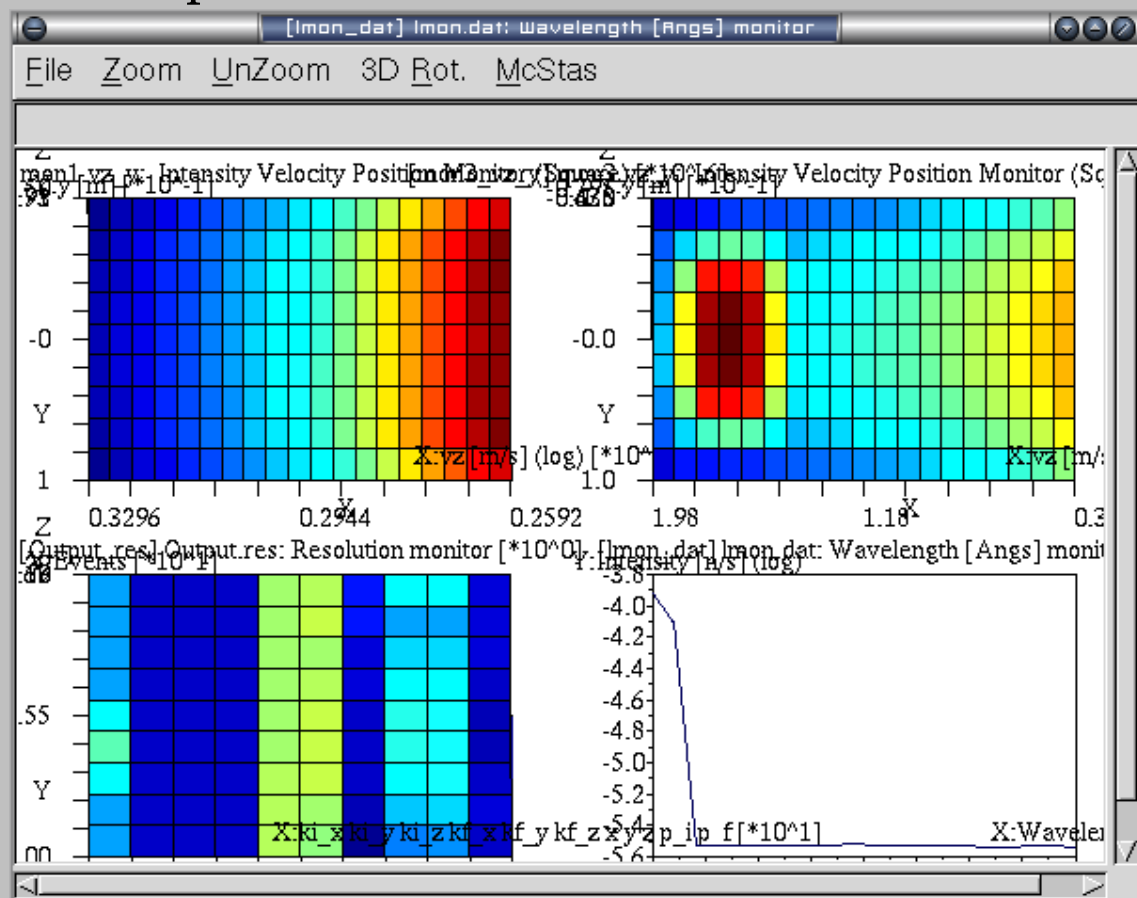
'mcplot'



'mcplot'



'mcplot'



Before McStas-1.7

Package	Basic use	Gui	Plotting	Tracing
cc/lex/yacc	x			
perl		x	x	x
PDL		x	x	
Tk		x		
perl-Tk		x		
PGPLOT		x	x	x
pgperl		x	x	x

McStas-1.7 and beyond

Package	Basic use	Gui	Plotting	Tracing	
cc	x				
perl		x	x	x	
PDL			x		a
Tk		x			
perl-Tk		x			
PGPLOT			x	x	a
pgperl			x	x	a
Matlab			x	x	b
Scilab			x	x	c
Scilab plotlib			x	x	c

Recommended packages for fully functional installation:

- BloodShed Dev-Cpp 5 (e.g. gcc + base libs)
- ActiveState perl + ActiveState Tk
- Plotting:
 - Matlab or
 - Scilab (*)

(*) mcdisplay only possible through scriptfile output

Now a total of 96 components !

New McStas components:

- Virtual input/output (split simulations as modules)
- Progress bar (with intermediate savings)
- General Filter (using file, eg PG, BeO, ...)
- Many components now can use table input
- Targeting components are now much easier to use

Contributed components:

- radial collimator
- honeycomb guide
- Fermi chopper (rotating frame)

Under testing/dev.

- General Powder derived from Single_crystal (diffraction)
- Mosaic crystals (for monochromators)
- Inelastic sample

- Further testing
- Documentation update

JUMP: ability to 'teleport' the neutron, or repeat a comp
(e.g. multi-process, or duplicate elements in curved guides)
MPI: parallel computation (quite easy)

Suggestions from the users?

- McStas-1.7 now has beta status
- The team is aiming at release in may 2003, once docs and tests are complete
- The next release includes
 - A few language extensions
 - A permanent cure for the different GUI problems
 - Support for new graphic backends (Matlab, Scilab)
 - Saving in multiple formats
 - Much improved support for our 'secondary' platform (Win32)
 - Simplified installation - both Unix and Win32

- Short demo, new graphical backends...