

# *McStas 1.9 – work in progress*

*McStas – A neutron ray–trace simulation package*

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- McStas
  - Project status
  - VnCS – code sharing agreement with VITESS
  - The continuing battle against BUGS
  - New stuff and things to come



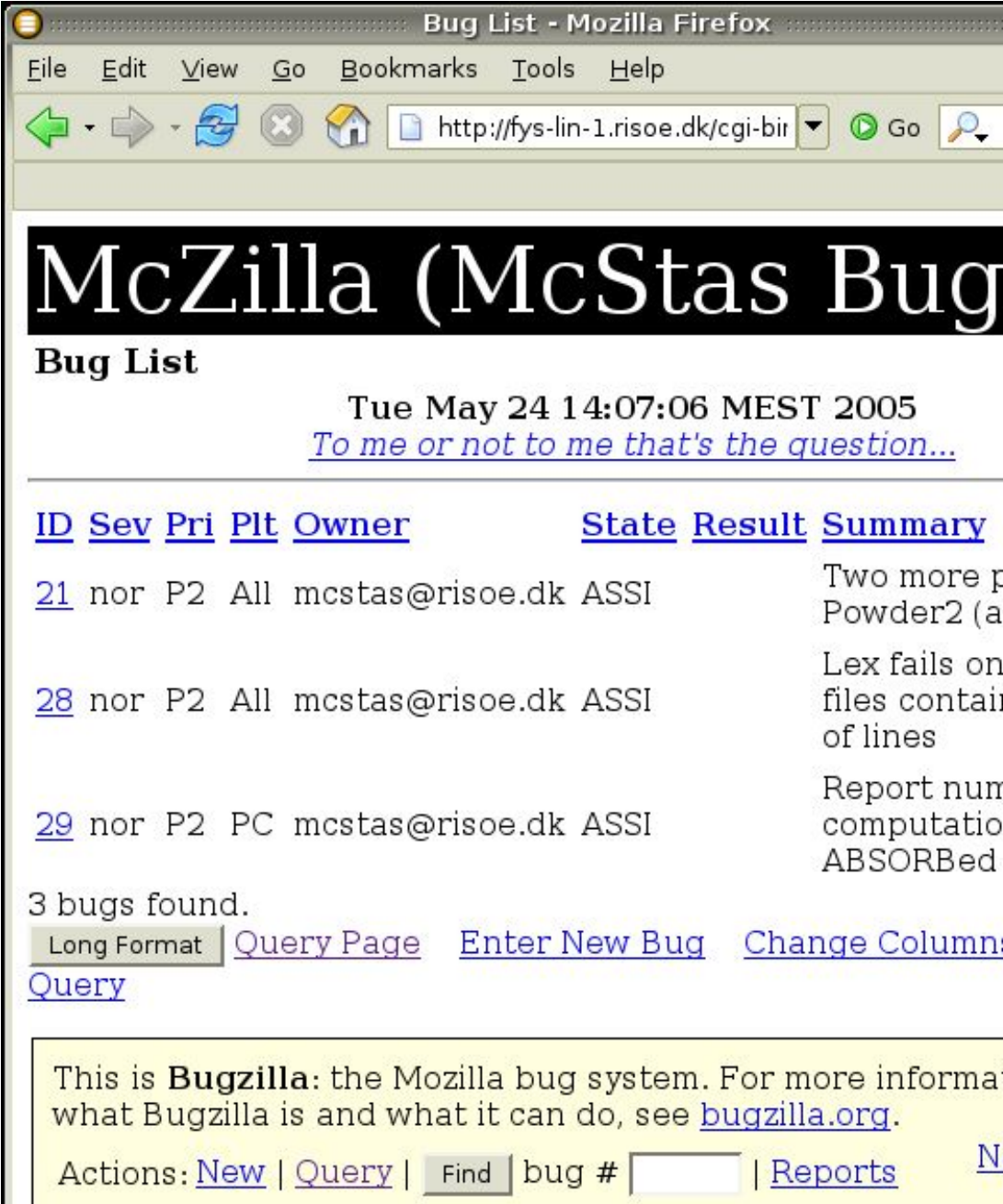
- Project status – strengthened efforts
  - 'New' people involved @ ILL, Klaus full member of McStas team since february
  - Heloisa now also doing McStas simulations @ ILL
    - => More focus on MC @ ILL
    - => More hands means more work done (we think)  
:-)

- New official website URL <http://www.mcstas.org>
- All members have access to this common website
- 2-3 yearly meetings in the team group (2<sup>nd</sup> this year)

- VnCS – Virtual-*neutron*-Code-Sharing
  - Strategic 'alliance' between (so far) McStas and VITESS
  - Signed by involved parties
  - Open to other packages
  - GPL based (common license)
  - Has already lead to 'common components', eased by the fact that Klaus is now @ ILL
  - Using compiler #define statements, shared components remain maintainable, compatible with both packages

- February meeting on code validity at ILL:
  - McStas team and ILL users present
  - Presentations on trouble with specific components
  - General agreement to focus more on valid components
  - Outcome:
    - McZilla (Bugzilla bug tracking system) taken into use
    - 'Kill' old and erroneous components
    - Document KNOWN bugs and limitations
    - Contributed components rely on the contributor to be validated/tested but the team offers limited support
    - Very complete test of Fermi chopper components by Klaus partly based on ILL stagiare work by Rebecca Peacock

- Current bug list from <http://www.mcstas.org/McZilla>:
- Full bug documentation
- Bugs/requests/contribs
- Later, full integration into CVS/DOC

A screenshot of a Mozilla Firefox browser window displaying the McZilla (McStas Bug) Bug List page. The browser's address bar shows the URL <http://fys-lin-1.risoe.dk/cgi-bin>. The page title is "Bug List - Mozilla Firefox". The main heading is "McZilla (McStas Bug) Bug List". Below the heading, the date and time are "Tue May 24 14:07:06 MEST 2005" and the quote "To me or not to me that's the question...". A table lists three bugs with columns for ID, Sev, Pri, Plt, Owner, State, Result, and Summary. The bugs are: ID 21, Sev nor, Pri P2, Plt All, Owner mcstas@risoe.dk, State ASSI, Result Two more p, Summary Powder2 (a); ID 28, Sev nor, Pri P2, Plt All, Owner mcstas@risoe.dk, State ASSI, Result Lex fails on, Summary files contain, of lines; ID 29, Sev nor, Pri P2, Plt PC, Owner mcstas@risoe.dk, State ASSI, Result Report num, Summary computatio, ABSORBed. Below the table, it says "3 bugs found." and provides links for "Long Format", "Query Page", "Enter New Bug", and "Change Column". At the bottom, there is a text box with the message "This is Bugzilla: the Mozilla bug system. For more informa what Bugzilla is and what it can do, see [bugzilla.org](http://bugzilla.org)." and a form for "Actions: New | Query | Find bug # [input] | Reports".

# New stuff and things to come



- Already there:
  - McWeb (will get other name) – html based simulation frontend, based on work by ILL student C. Jean
  - New components:
    - PowderN (from Copenhagen University course)
    - Source\_simple (replacing four similar codes...)
    - TOF version of Res\_sample (TOF resolution functions, will be integrated in 1 component)
    - ONE working Fermi chopper (Markus Poehlmann component)
  - New / improved tools
    - mcdaemon – on Unix, send -USR2 (save) signals to running process
    - Many adjustments to mcgui (new users have new ideas)
  - Small and big bugs eliminated, including gravitation bug...
  - Improvements to tutorial / teaching material (Copenhagen University course)
    - Will provide 'extended' tutorial, complete teaching material for neutron course, build powder diffractometer (DMC), TAS (Rita-II), SANS (Sans-II @PSI).
  - Real work done on component manual (YES! - Good, Kim)

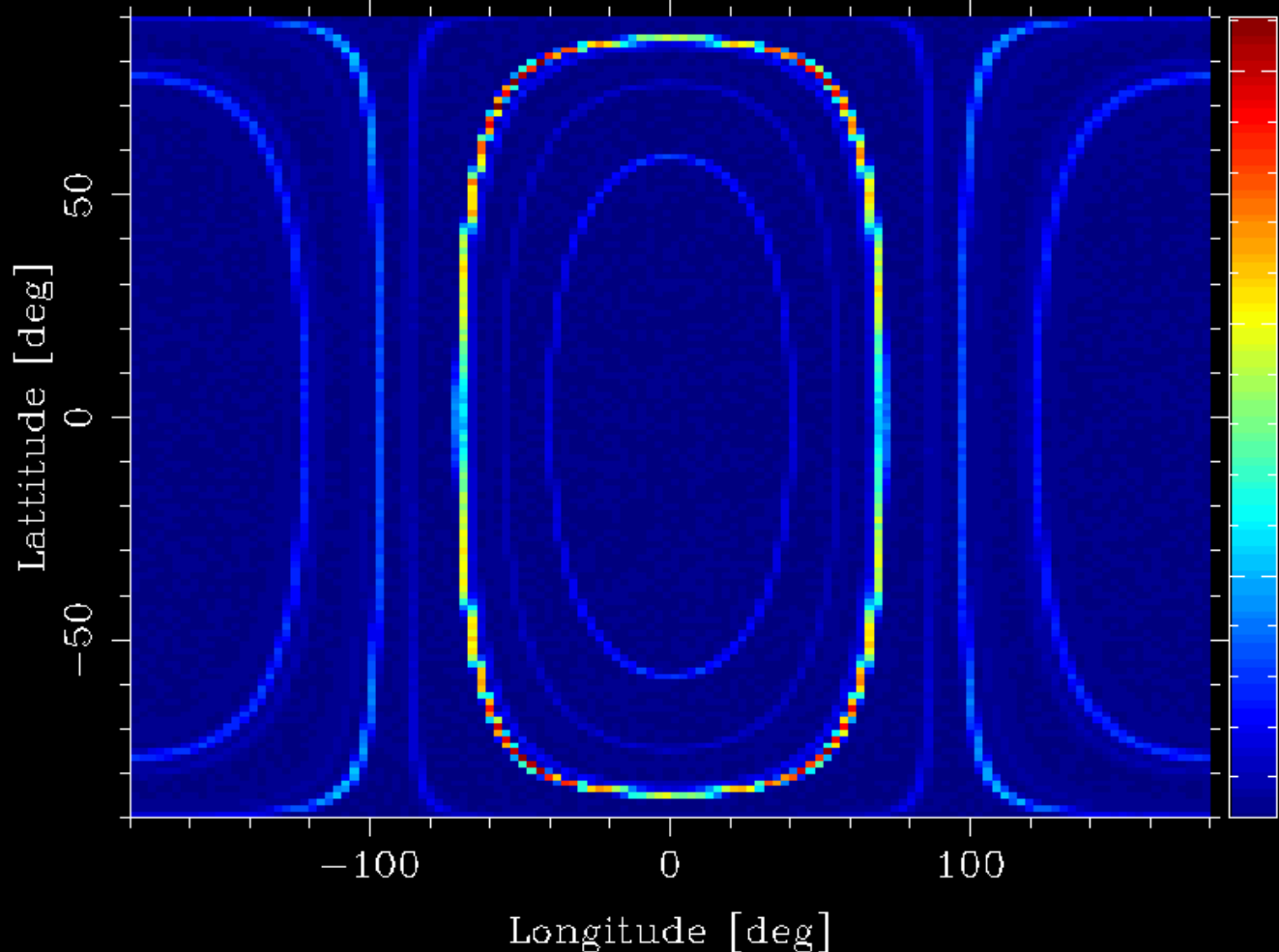


# New stuff and things to come

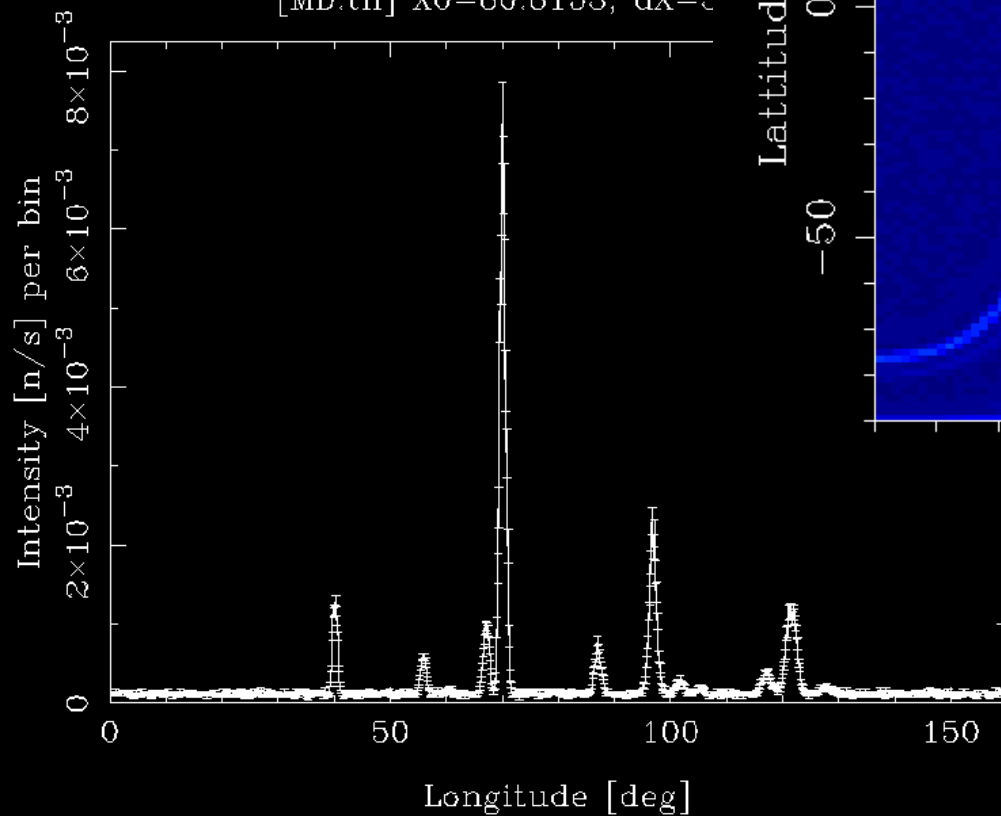
- PowderN:

- N lines ( $n$ ,  $\tau$ ,  $F^2$ , DW,  $w$ )
- Incoherent scattering
- No multiple scattering
- Here  $\text{Al}_2\text{O}_3$

4PI PSD monitor      PI4mon  
[4PI.sim] X0=-0.117881; dX=93.8068; Y0=-0.0470823; dY=56.02



Longitude [deg] monitor      M  
[MD.th] X0=80.8153; dX=8



# New stuff and things to come



- To come (in oncoming and following releases)
  - More emphasis on new components plus validity
  - More work on documentation
  - Several new components ready
  - JUMPS
  - Concentric components
  - Porting of VITESS B-field capable components
  - mcresplot for Scilab/Matlab
  - mcformat PGPLOT -> other formats
  - Sources (ILL source: Ageron Tripoli, VITESS)
  - Volume data (PSD versus time (scan))
  - More example instruments
  - Special TOF/TAS class instrument frontends:
    - TAS with reciprocal space code – possible collaboration with M Koennecke, PSI, UB matrices etc.
    - TOF with chopper phase angles -> chopper diagrams

# Date for new release?



- REALLY soon now ;-) - BUG/annoyance list for mcstas-1.8 is getting too long -> update release. Will be discussed @ ILL may 26th-27th
- Shorter release cycle to benefit from new features earlier

# Conclusion



- McStas is doing really good
- Good collaboration
- Feedback from users provide basis for enhancements
- Many things to do now and in the future...