The ILL Joins the Mantid Project

Dr Ian Bush, Dr Gagik Vardanyan, Mrs Verena Reimund,
Dr Antti Soininen, Dr Miguel Gonzàlez

MANTID

INSTITUT MAX VON LAUE - PAUL LANGEVIN

NEUTRONS FOR SOCIETY

Talk Overview

- Mantid and Adoption at the ILL
- Working with the Mantid Team
- Lamp and Mantid Comparison
- Framework changes to support the ILL
- Workflows
  - Time of Flight
  - Backscattering
- Future work

The Mantid Project – Neutron Data Reduction

Science & Technology Facilities Council
ISIS

NEUTRONS
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MANTID

EUROPEAN
SPALLATION
SOURCE

MLZ
Heinz Maier-Leibnitz Zentrum

PAUL SCHERRER INSTITUT
PSI

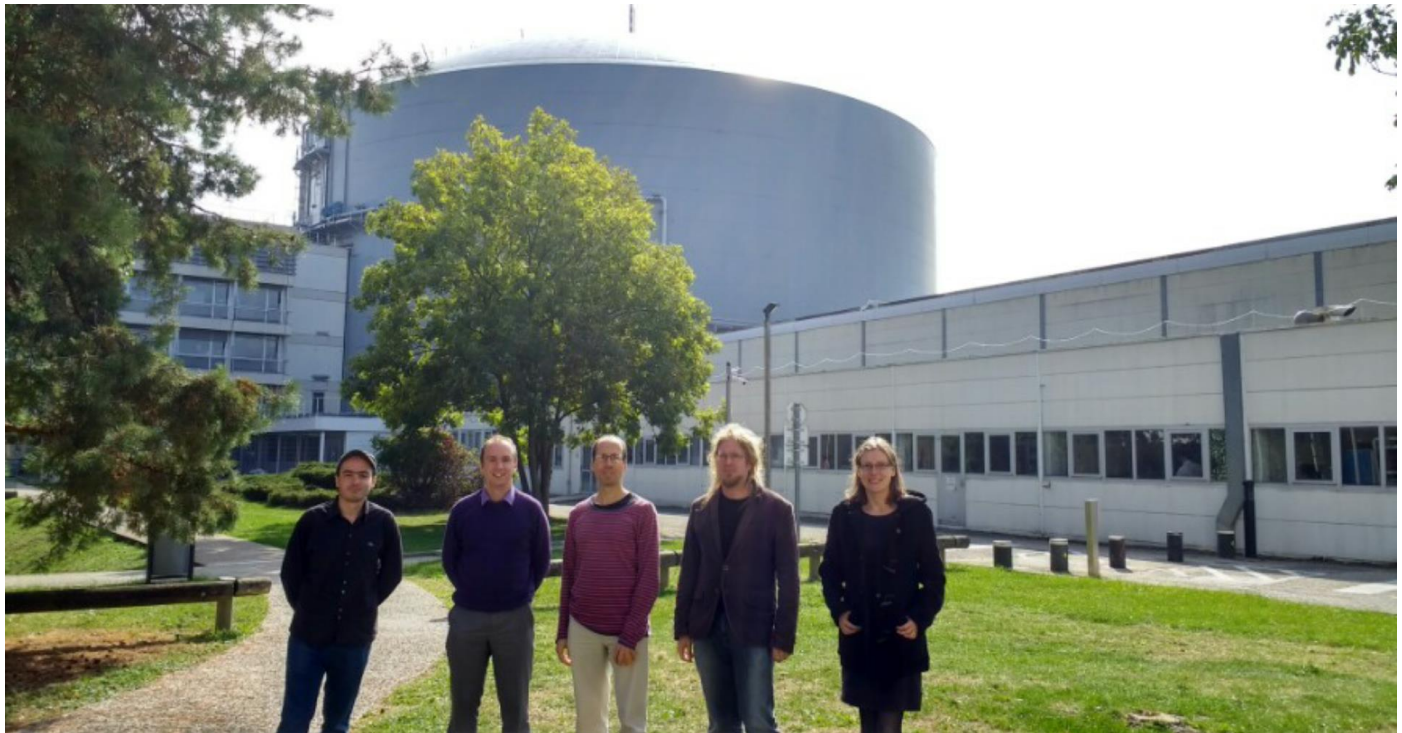
ansto

McStas
n

Tessella

The Bastille Project for Mantid Adoption

- Bastille project, part of ILL's Endurance programme, to support 20 ILL instruments after 3 years, replacing Lamp
- People involved:
  - Antti Soininen, Verena Reimund, Gagik Vardanyan
  - Ian Bush – technical lead for one year – from Tessella
  - Miguel Gonzàlez – scientific lead for the project – from ILL's CS Group



Working with the Mantid Team

GitHub

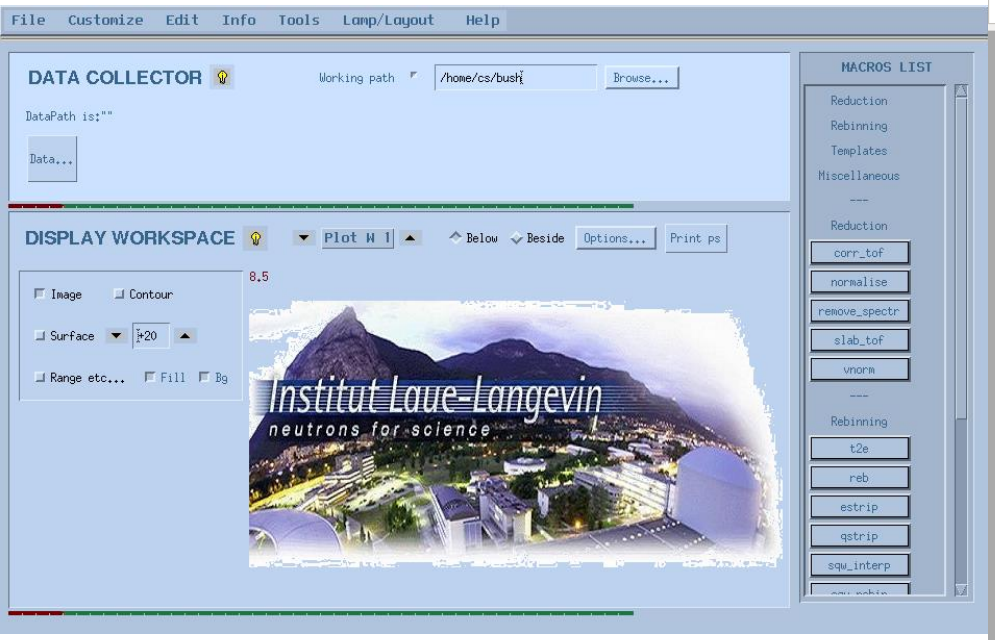
Jenkins

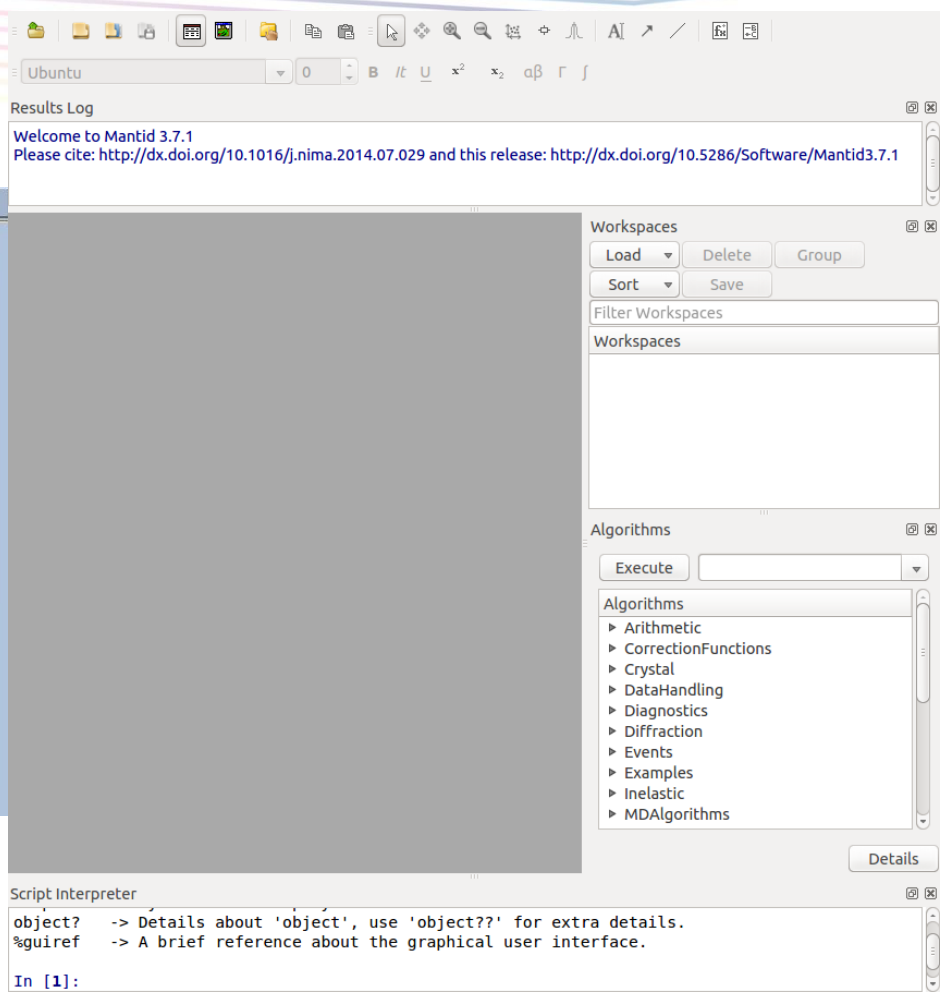
slack

BlueJeans

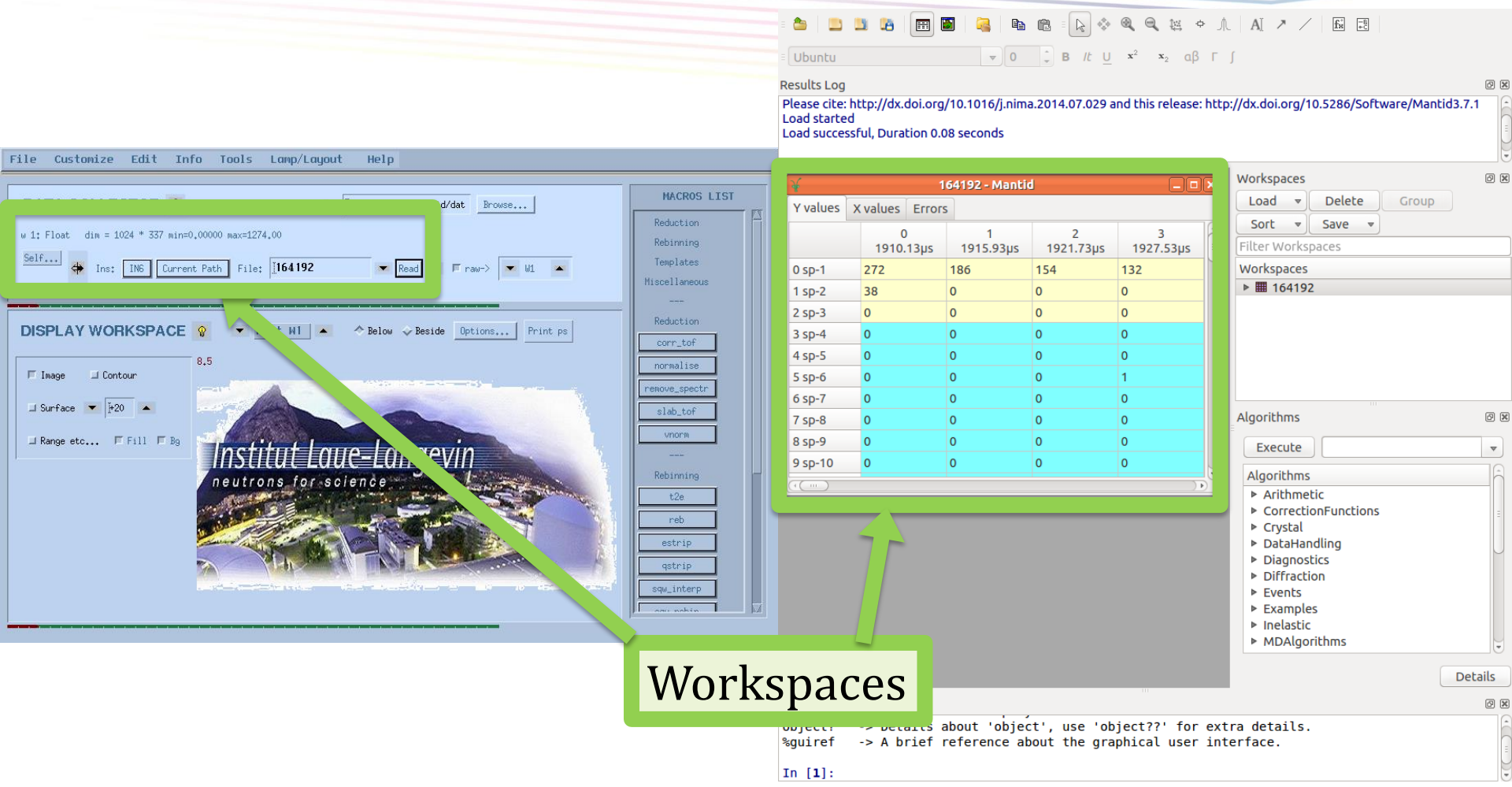
skype™

Lamp and Mantid



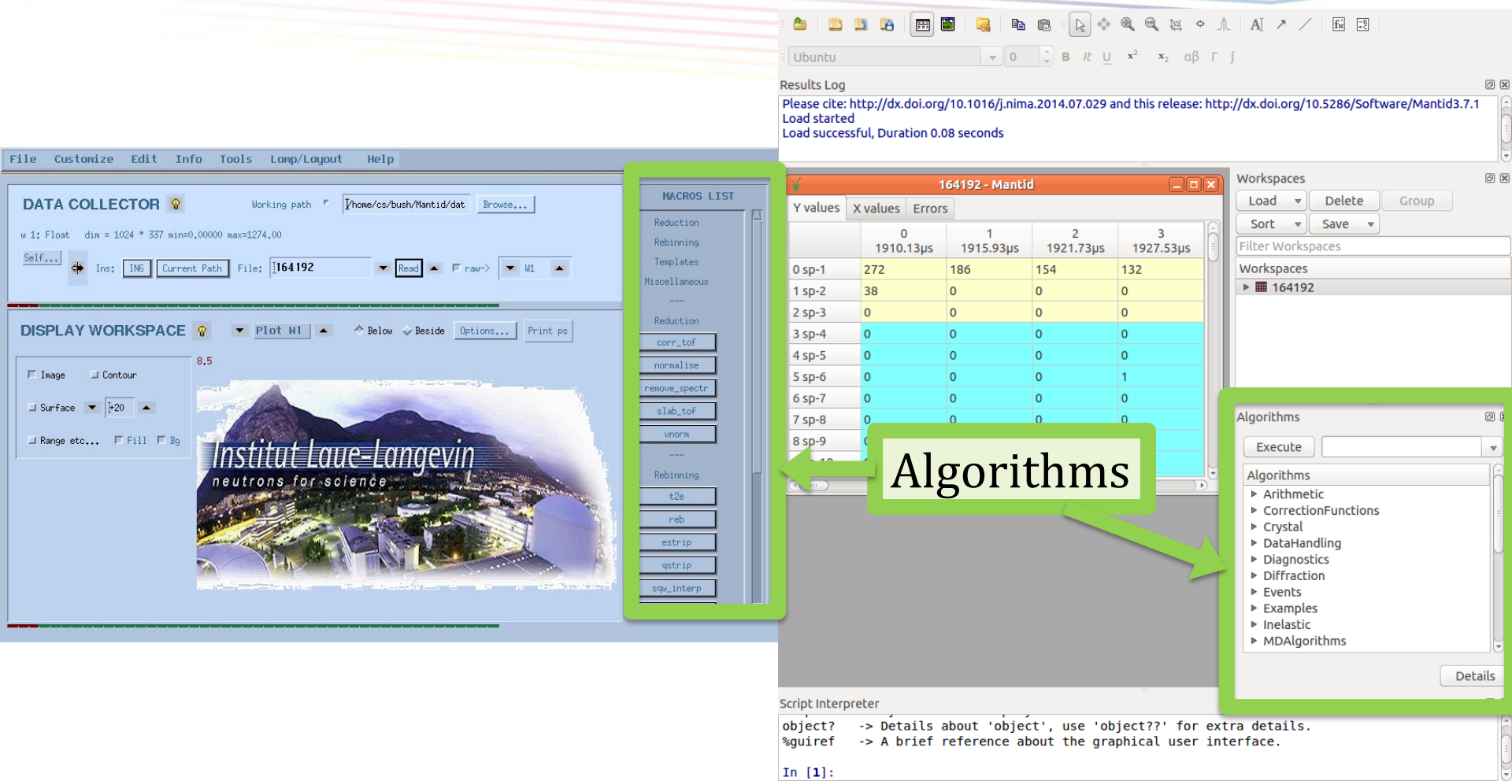


Lamp and Mantid

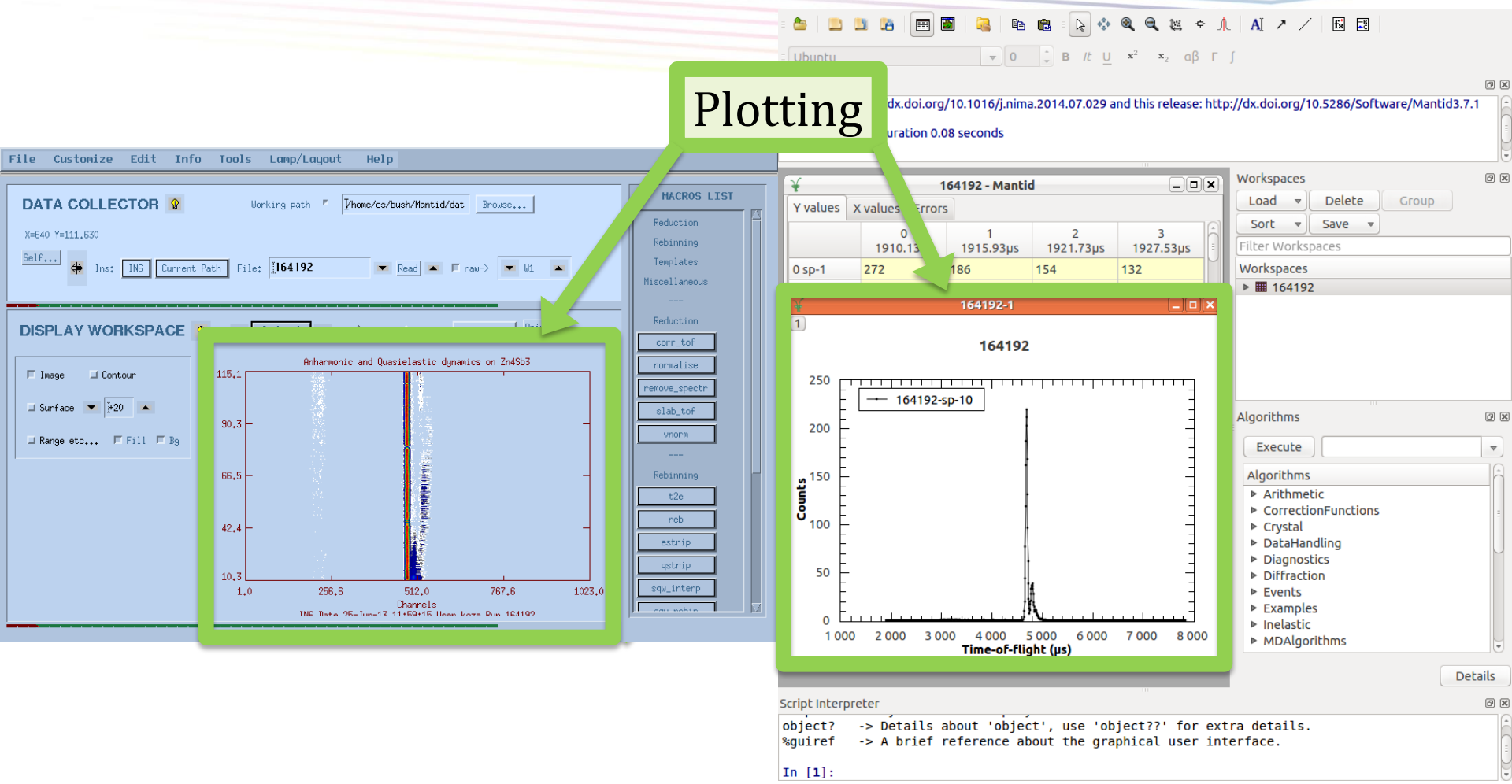


Workspaces

Lamp and Mantid



Lamp and Mantid



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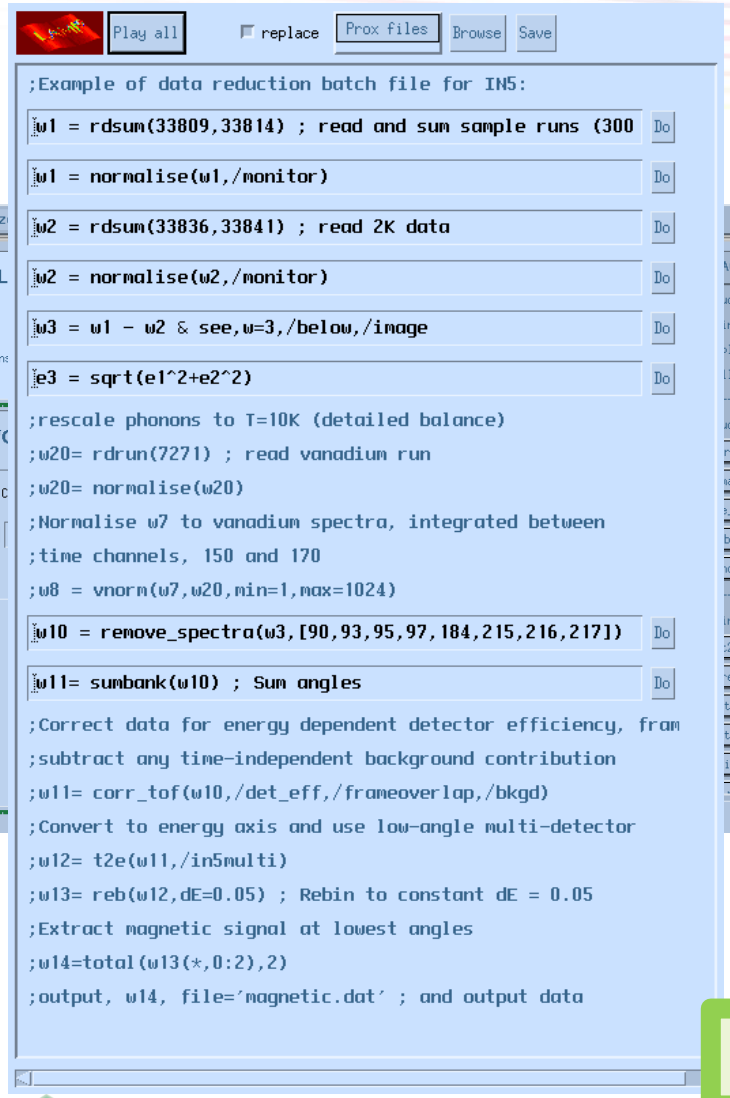
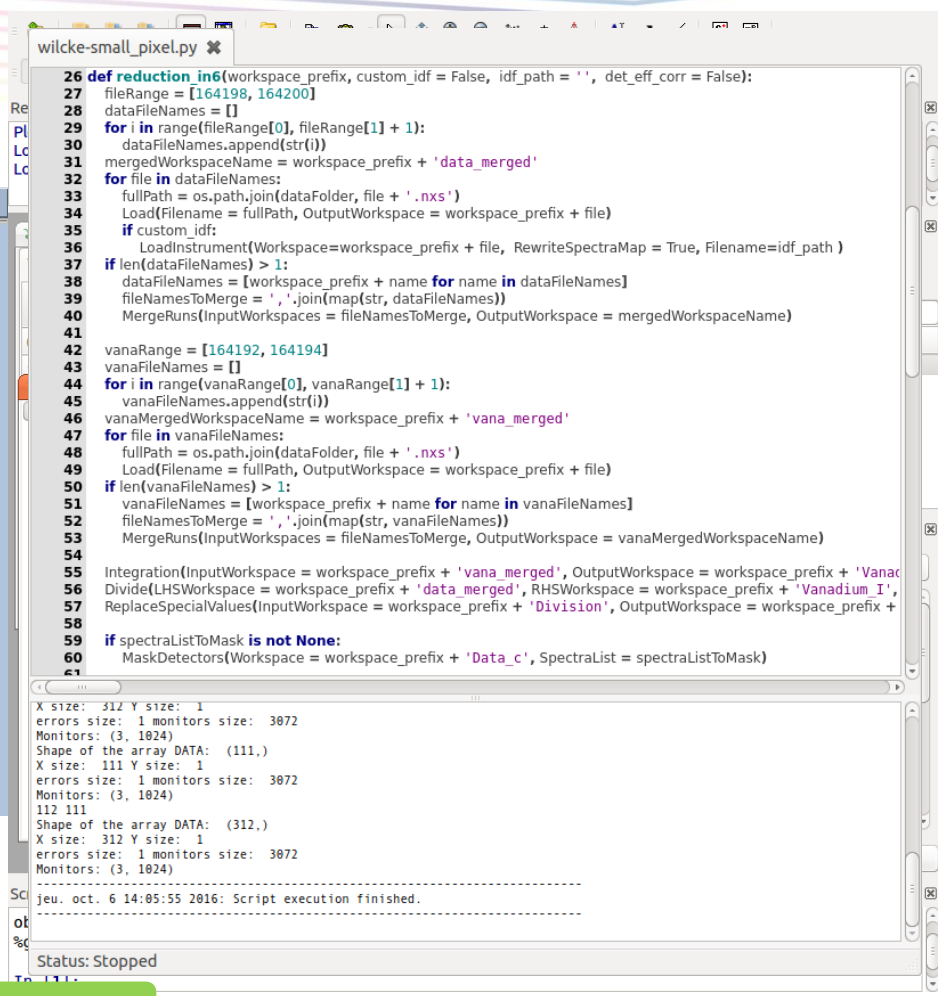


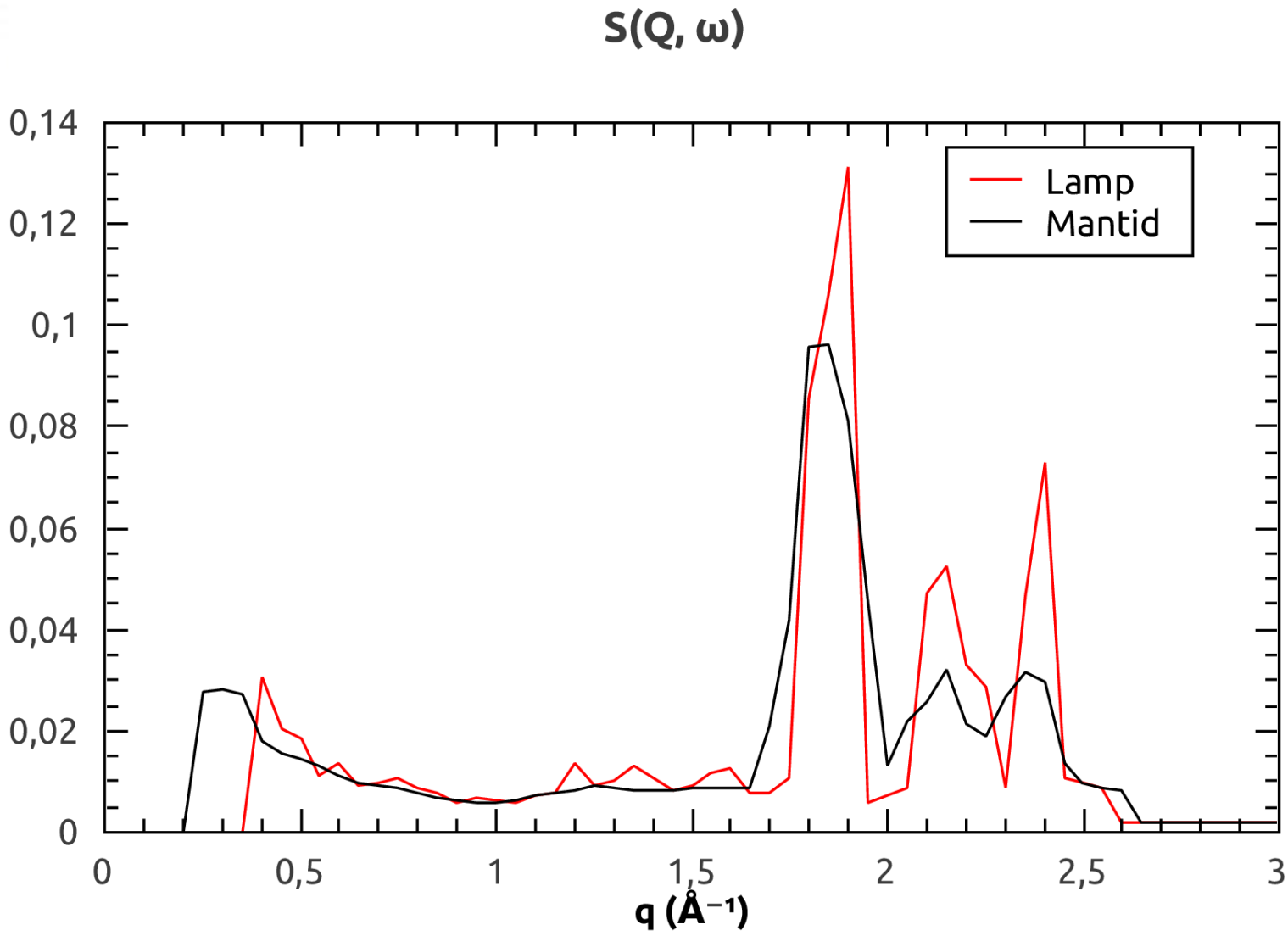


Scripting

ILL Workflows

- Started with DGS Time-of-Flight Spectrometers (IN4/5/6) and Backscattering (Indirect Geometry) instruments (IN16B)
- Initial work started by:
  - Ricardo Ferraz-Leal (loaders, instrument definitions, sample scripts)
  - Spencer Howells and Elliot Oram (IN16B workflow)
- Work on workflows themselves, and features required to support them, for example
  - File loading, filtering and merging
  - Flat background moving window average
  - Incident energy calibration for DGS Instruments

Time-of-Flight Workflow – S(Q,ω) Comparison



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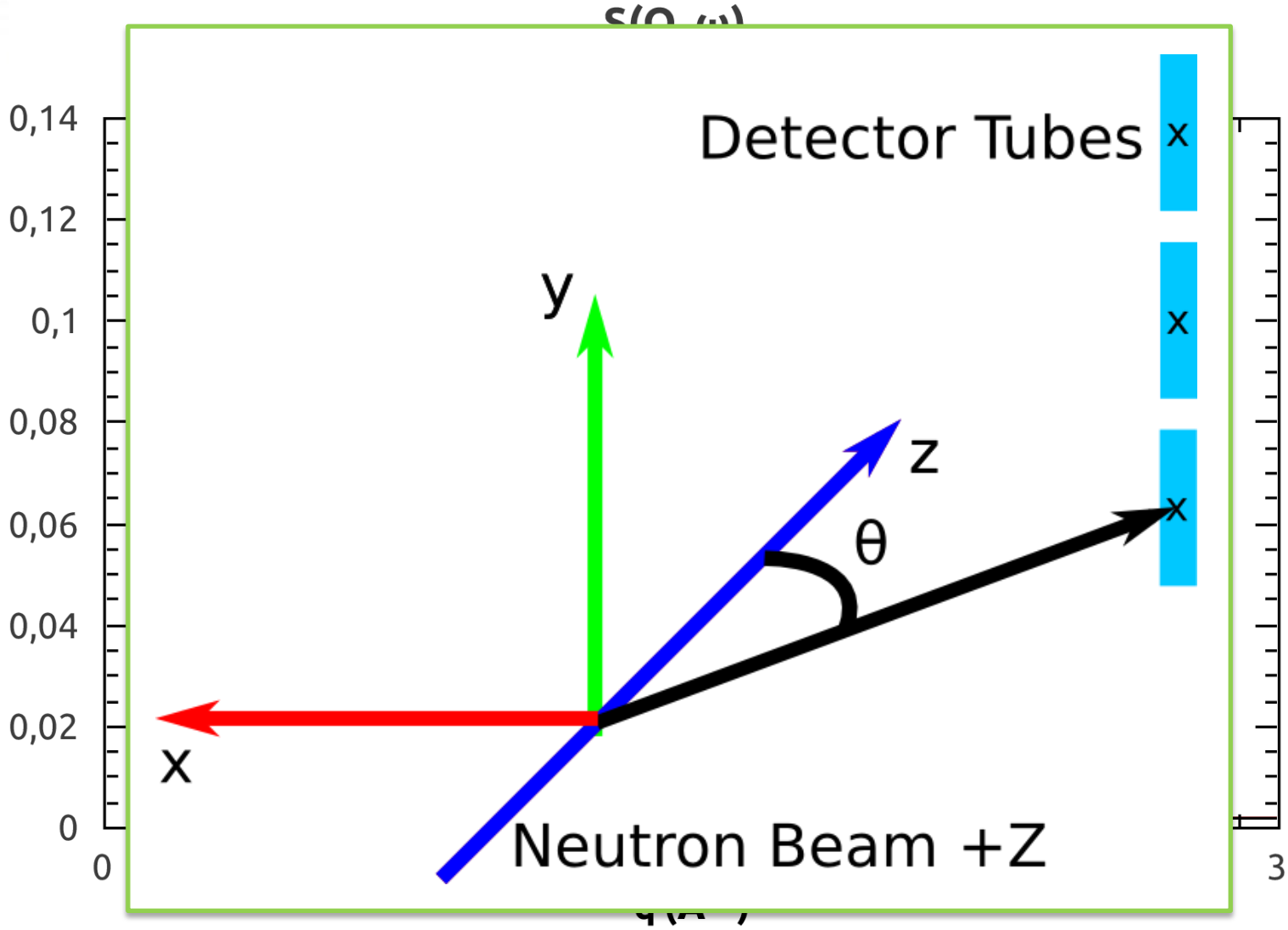

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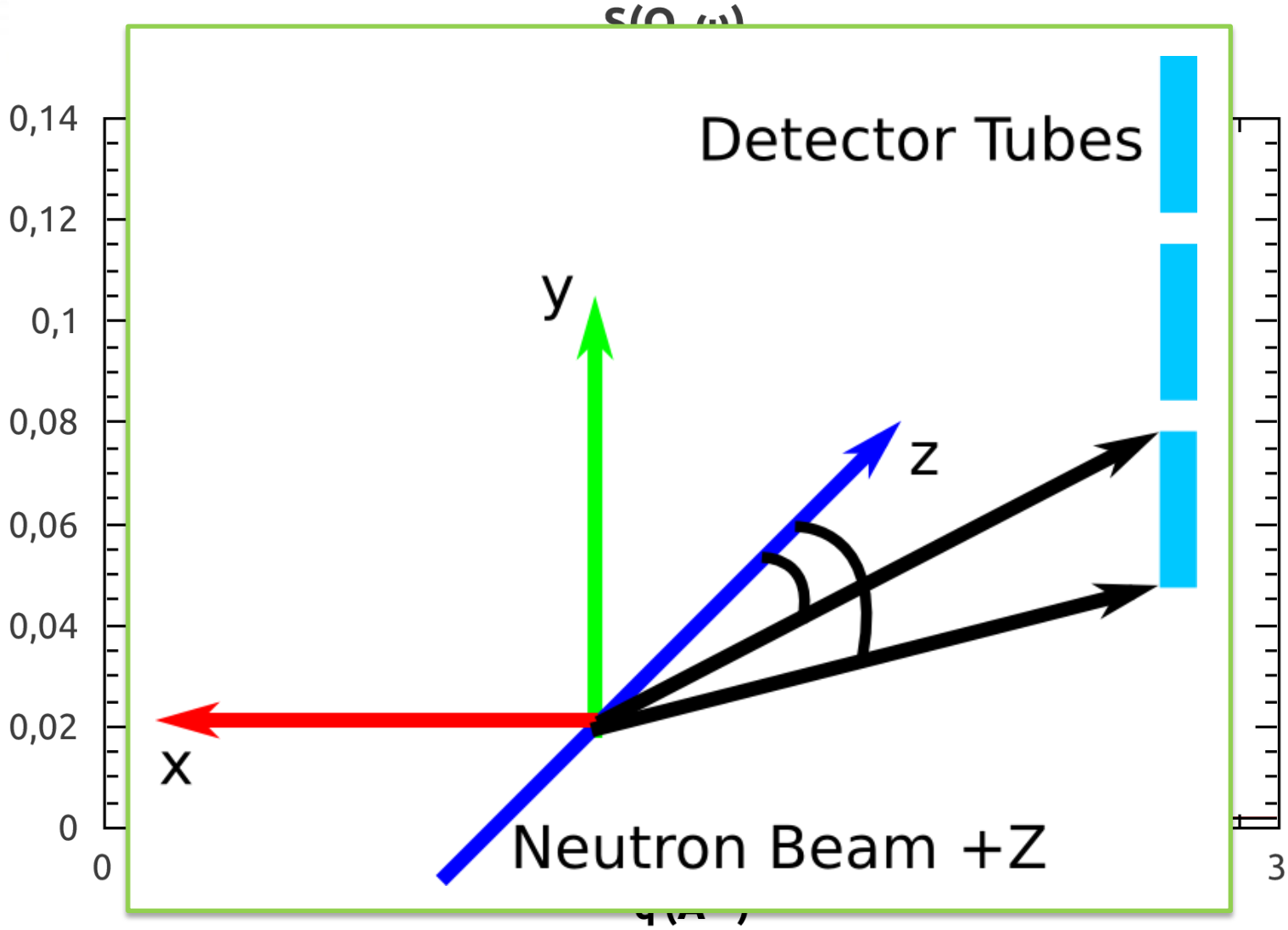
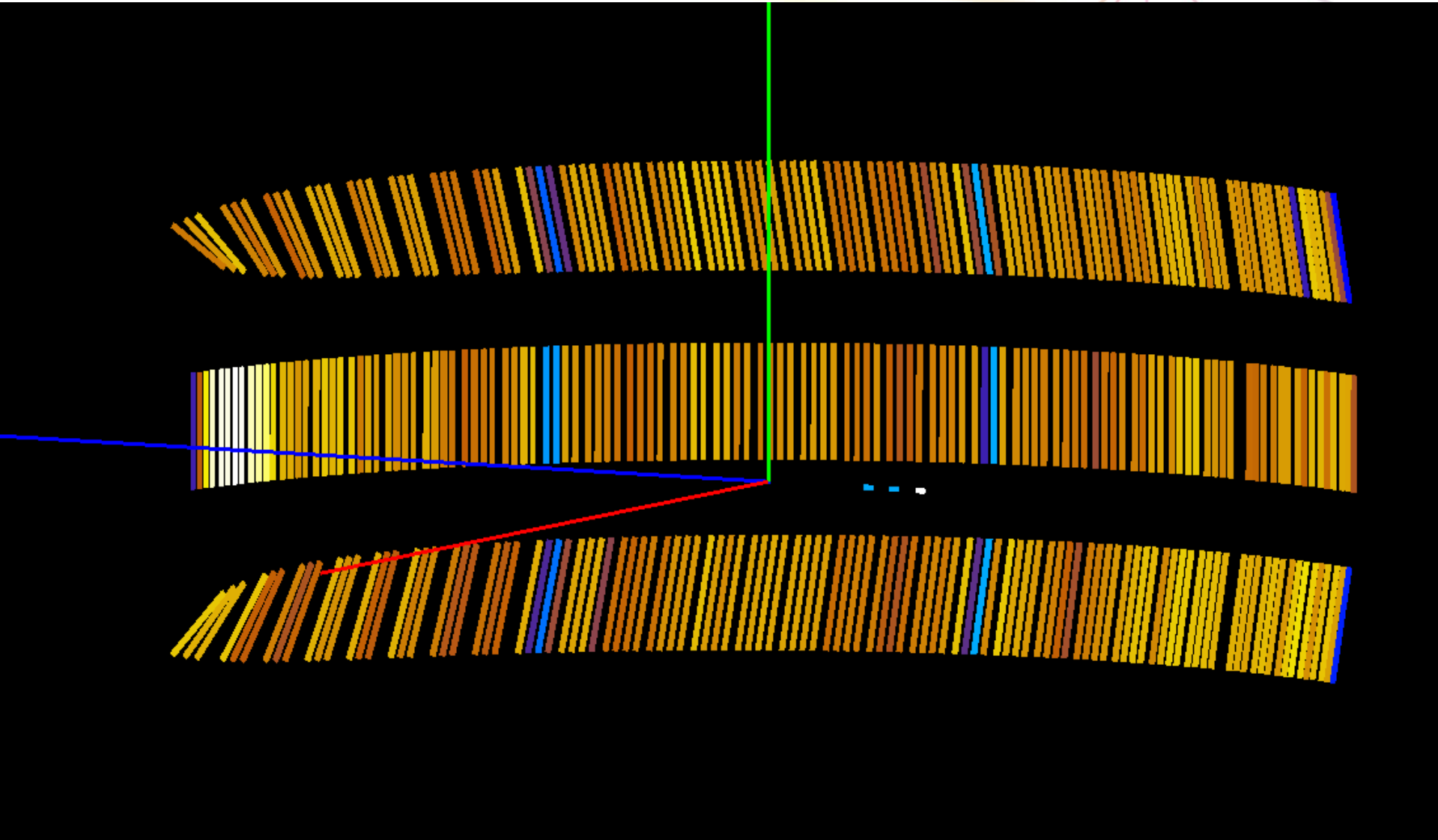


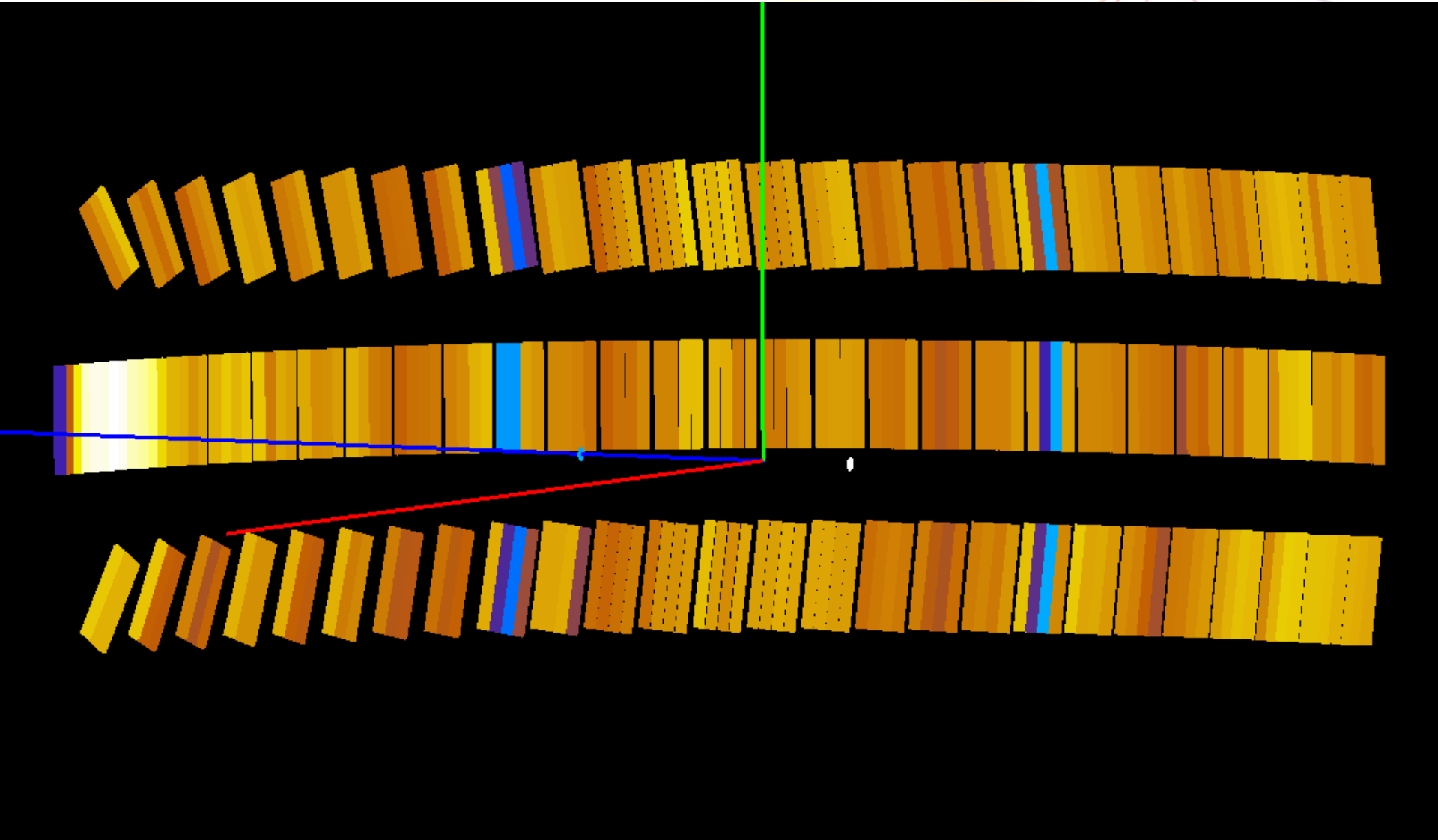
Time-of-Flight Workflow

Instrument Definition – IN6 Original



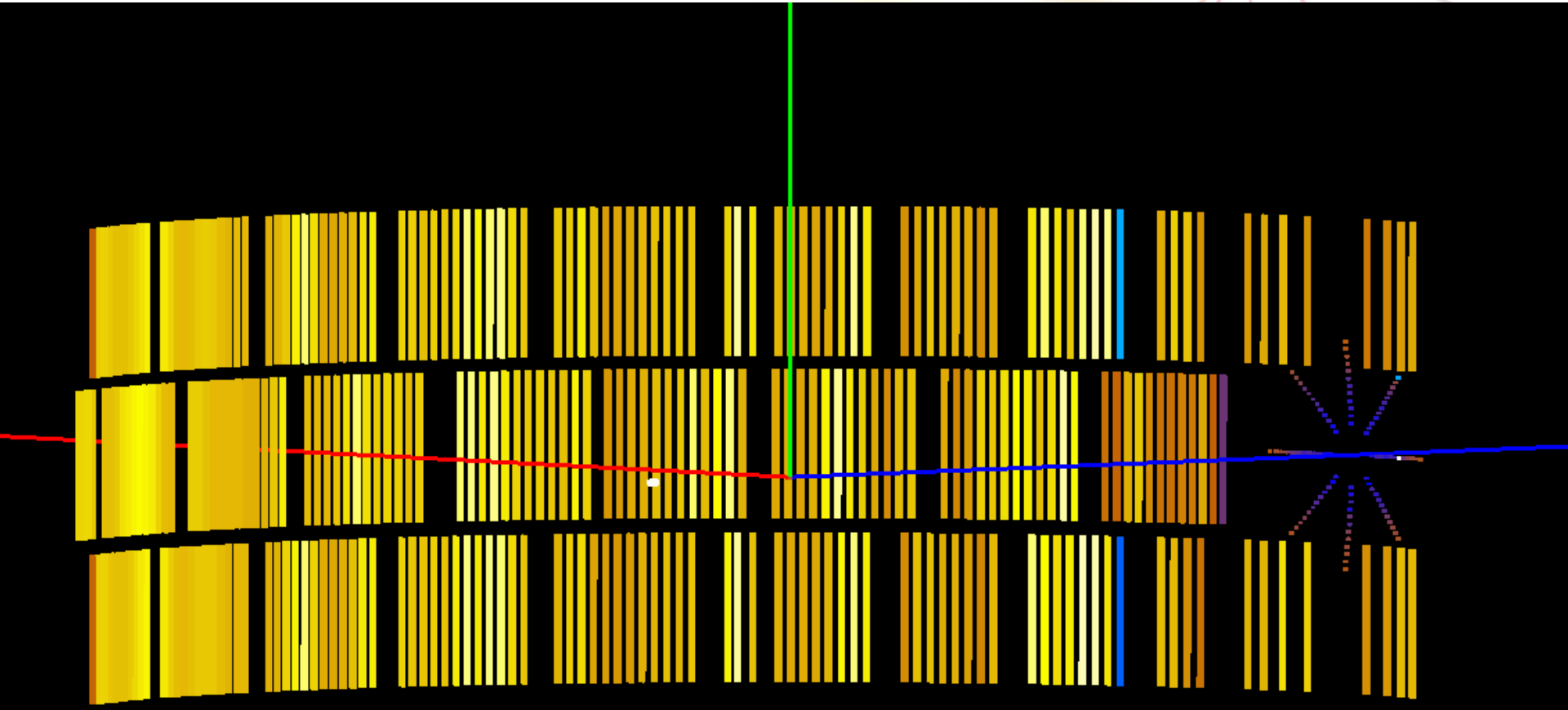
Time-of-Flight Workflow

Instrument Definition – IN6 Updated



Time-of-Flight Workflow

Instrument Definition – IN4 Original



Time-of-Flight Workflow

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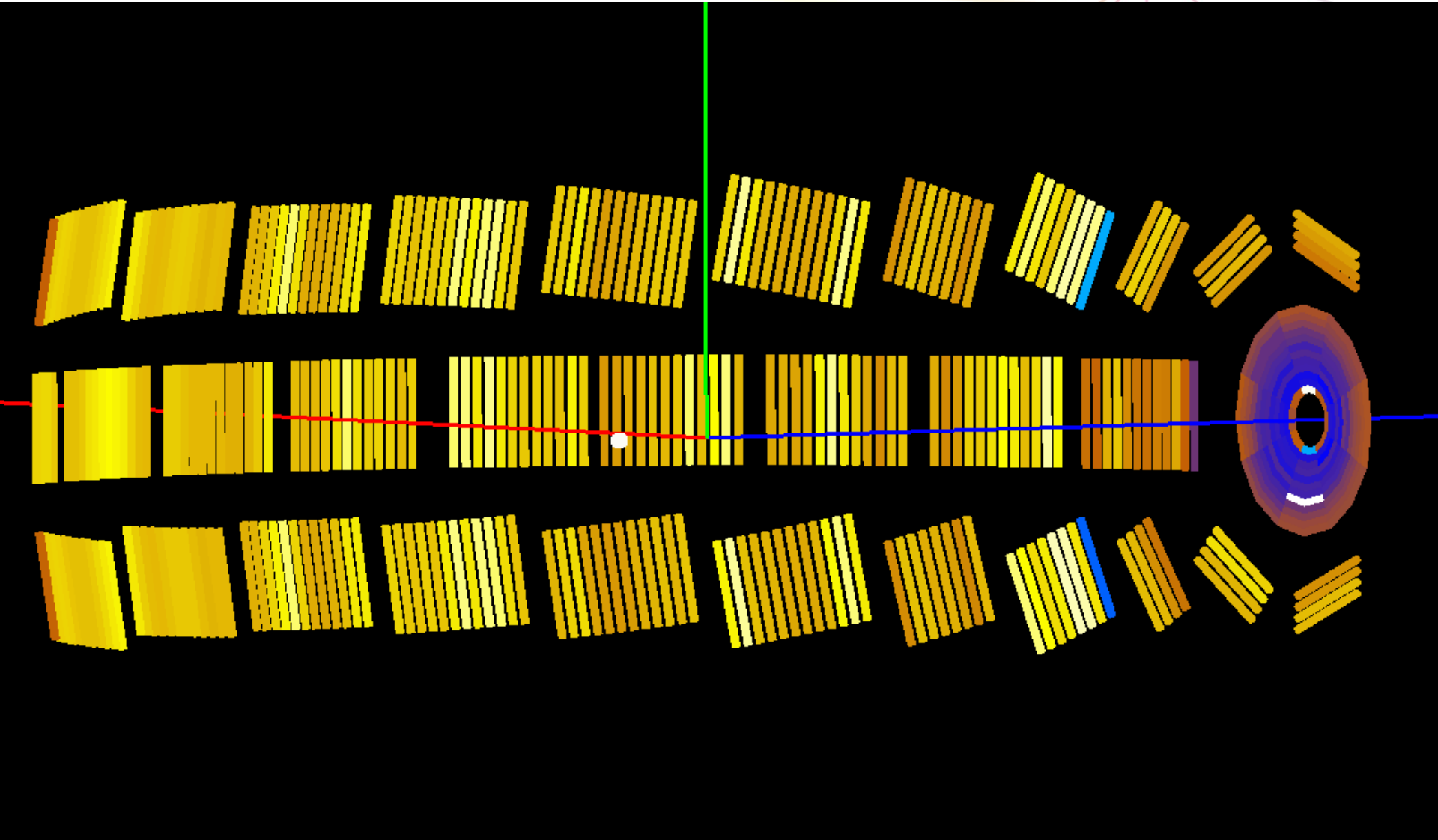
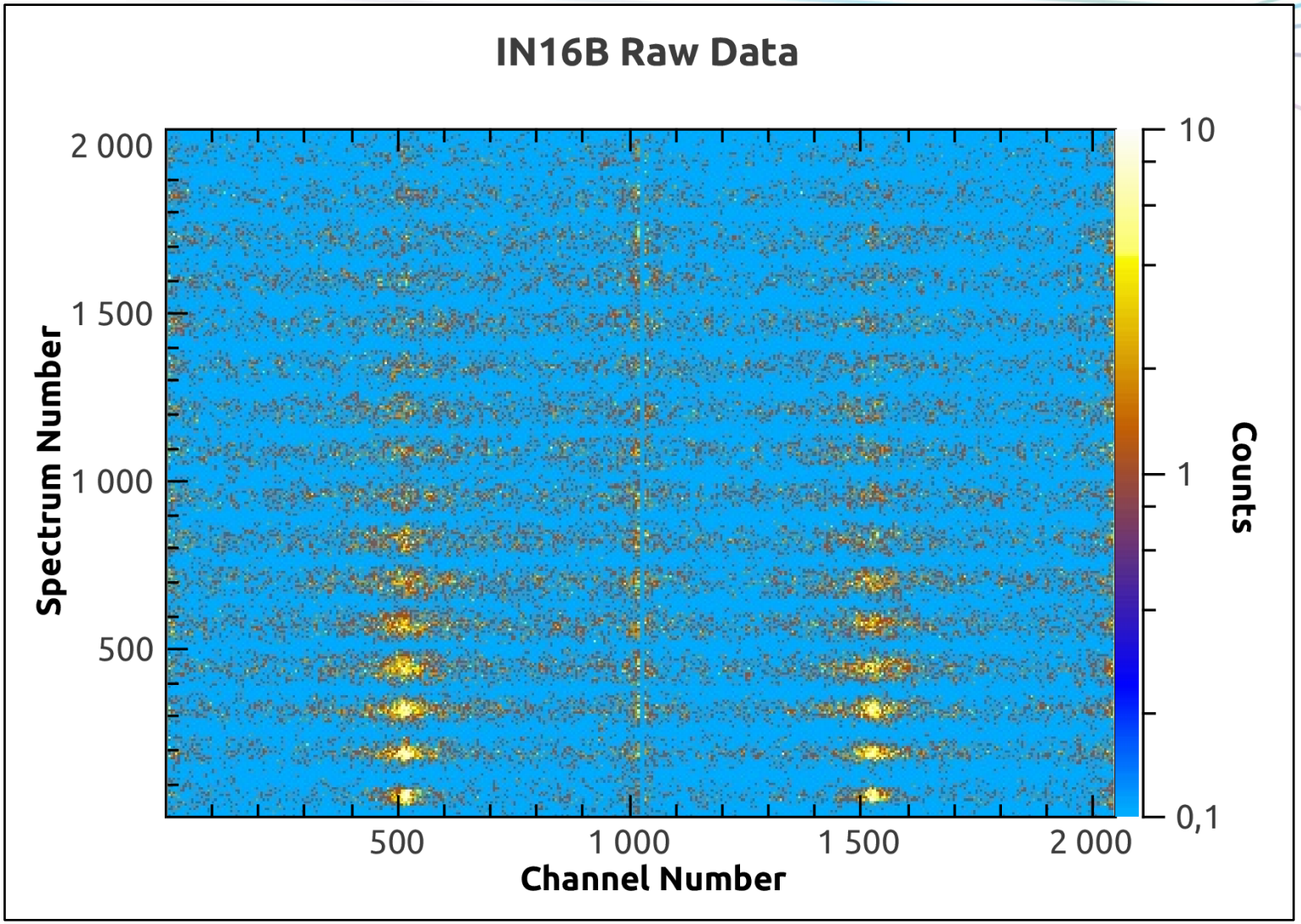


Backscattering Workflow



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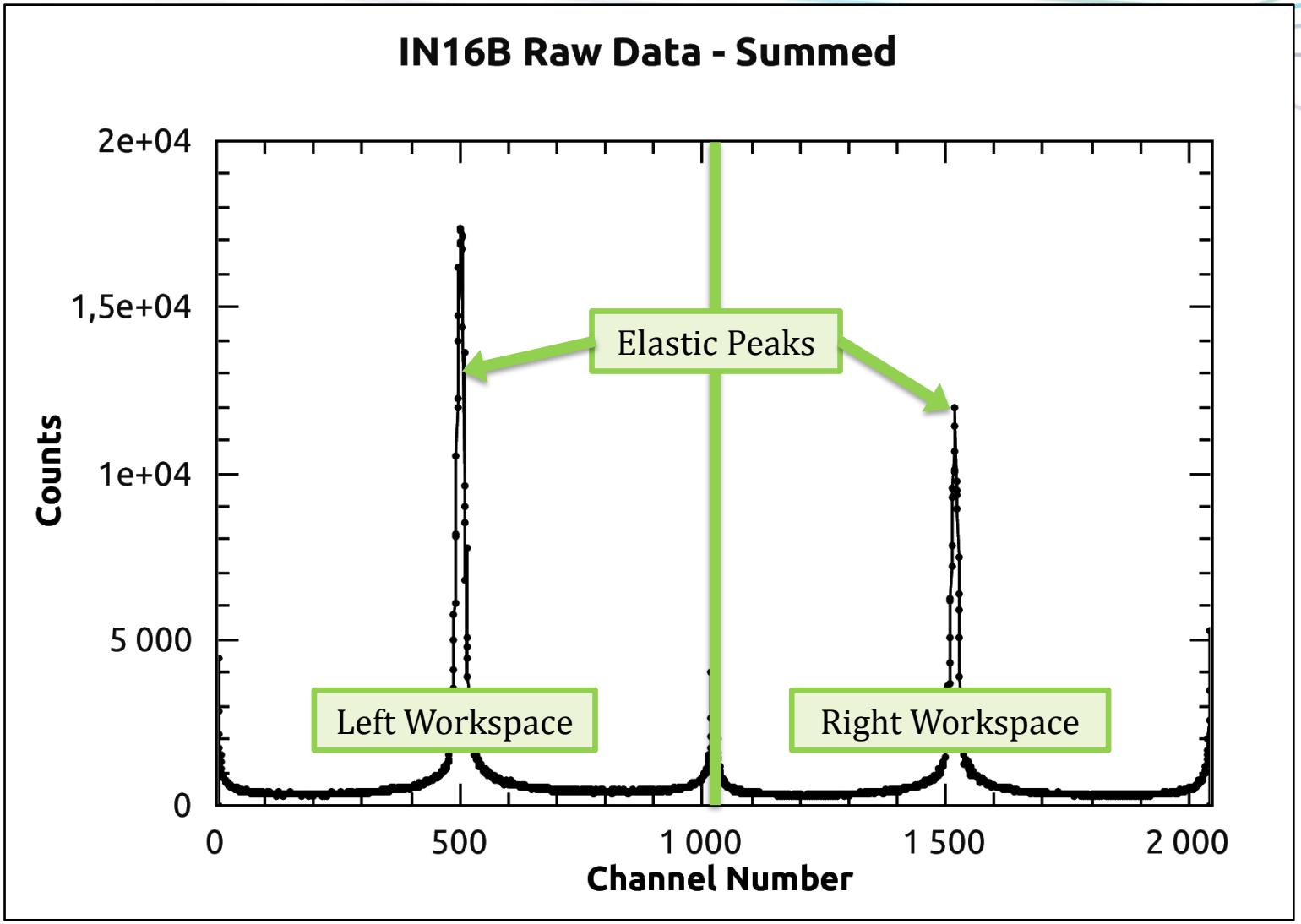
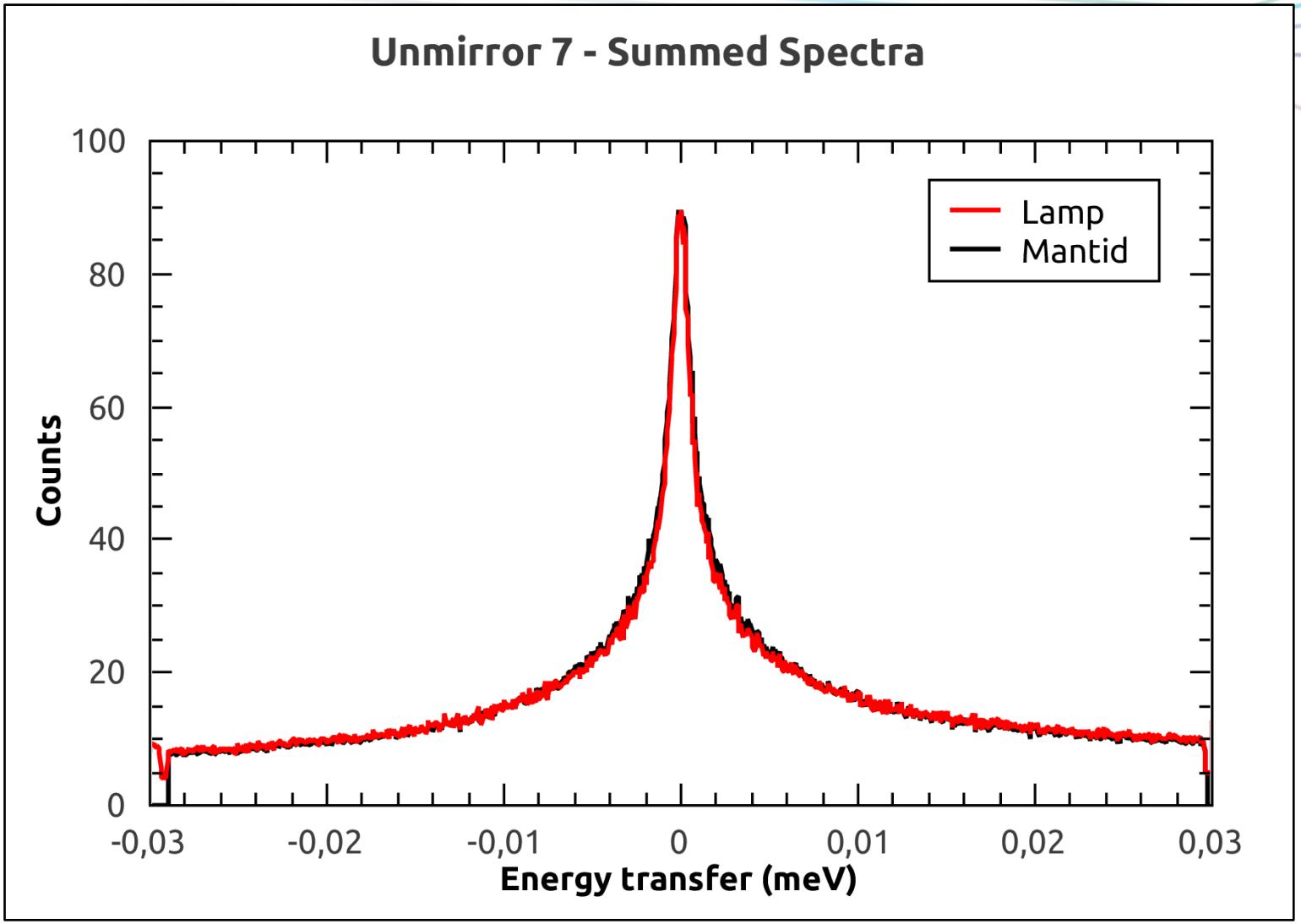
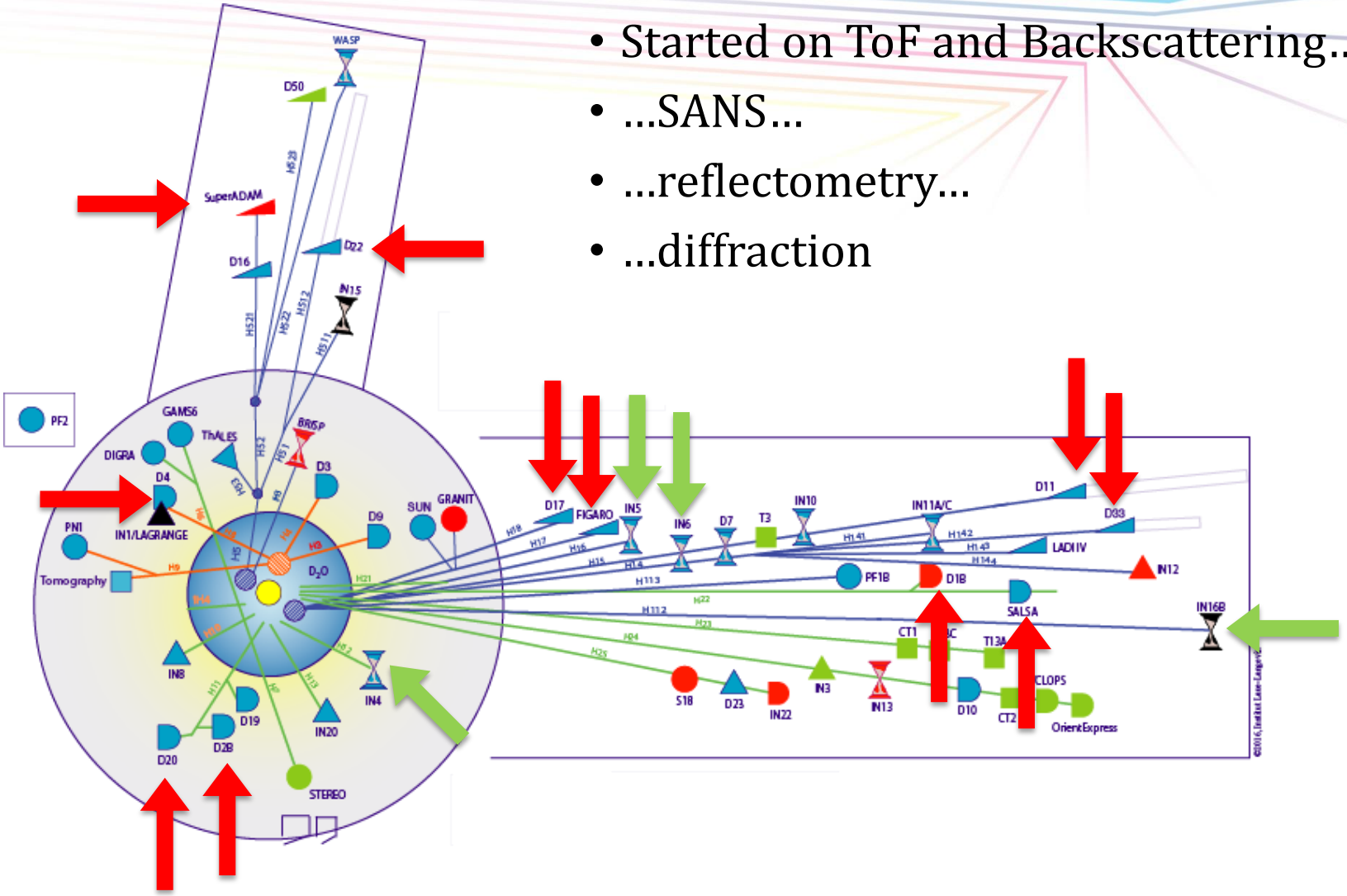


Backscattering Workflow – Lamp and Mantid



Future Work – Technique Areas

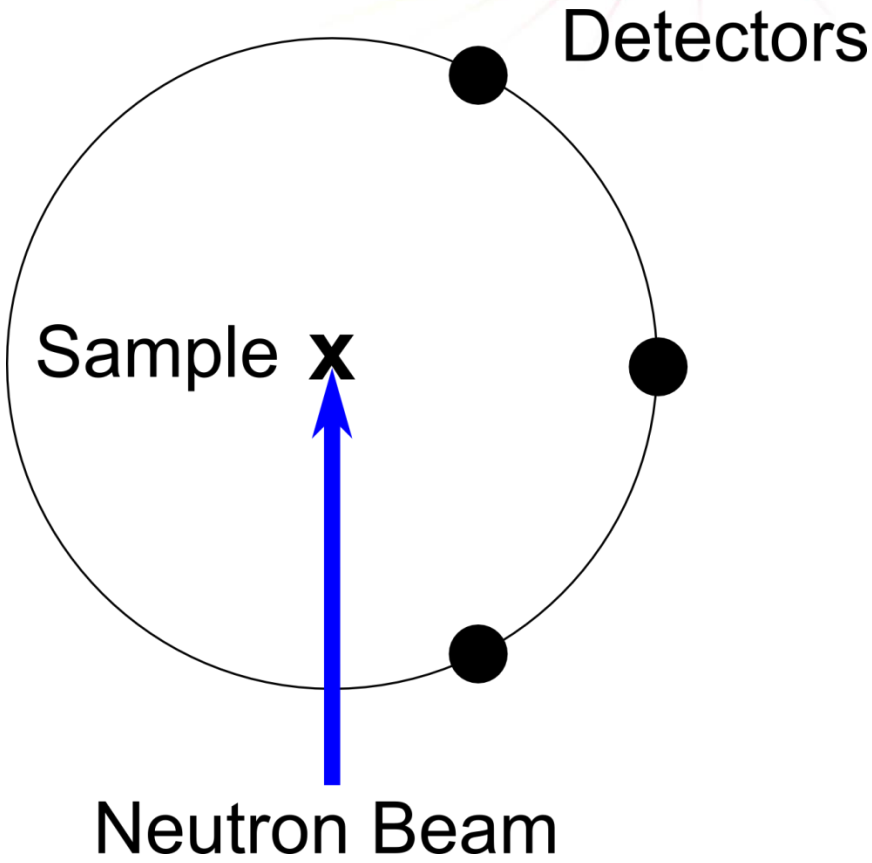
- Started on ToF and Backscattering…
- …SANS…
- …reflectometry…
- …diffraction



Future Work – Scanning Instruments

- Support the instruments at ILL with movable detectors, such as D2B, D4 and D7

D2B – Powder Diffractometer



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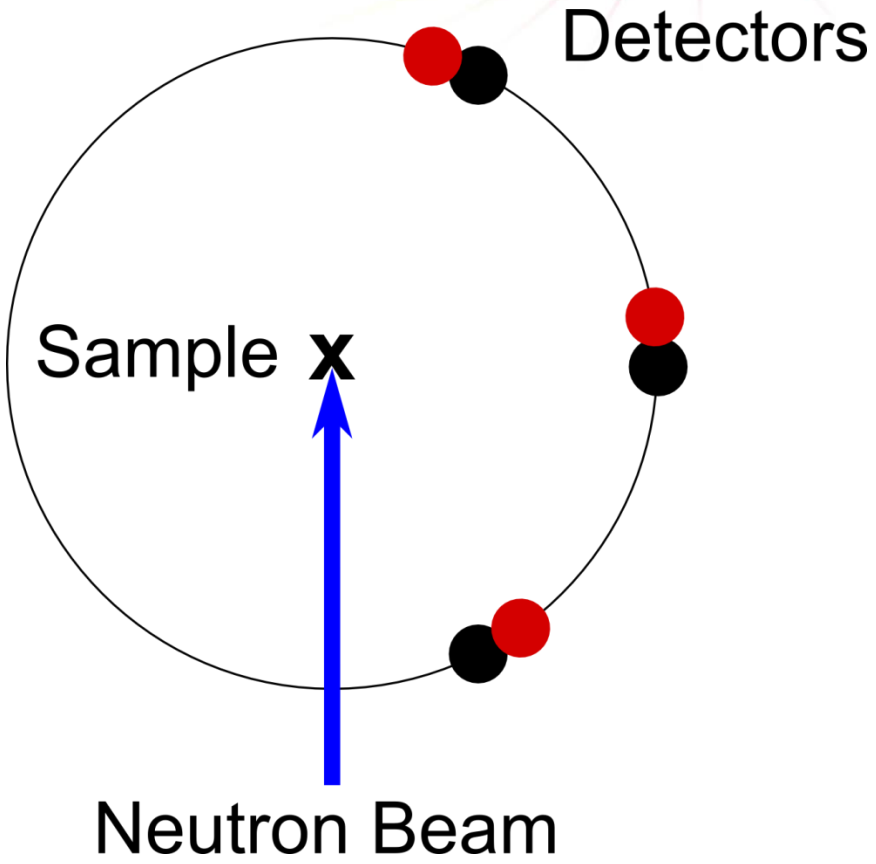

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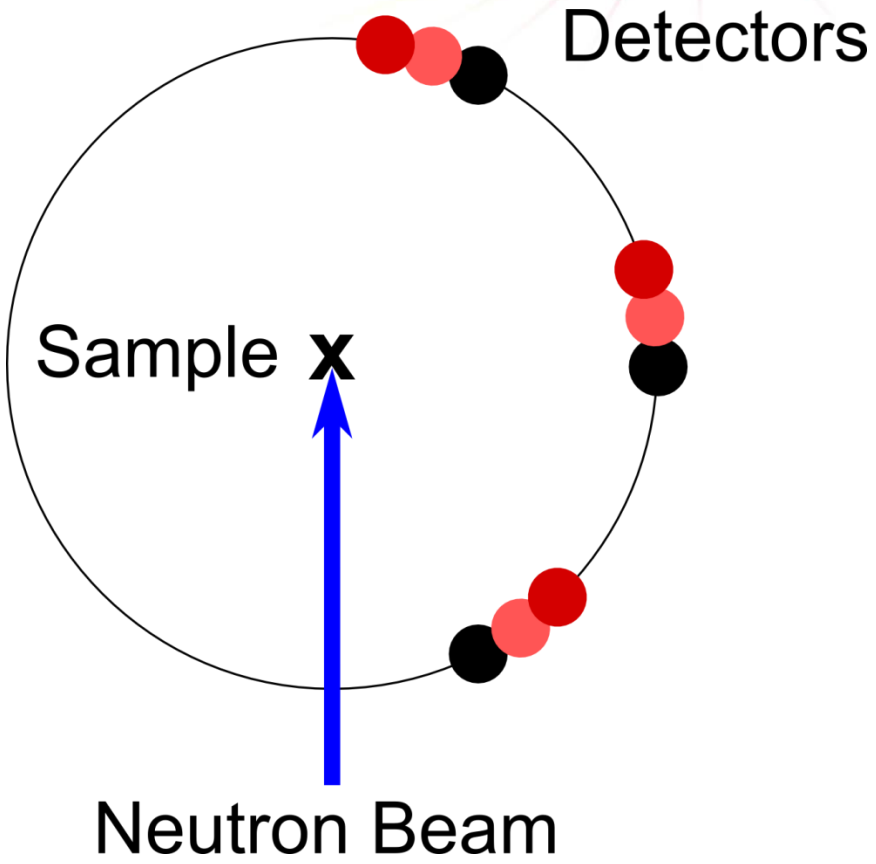

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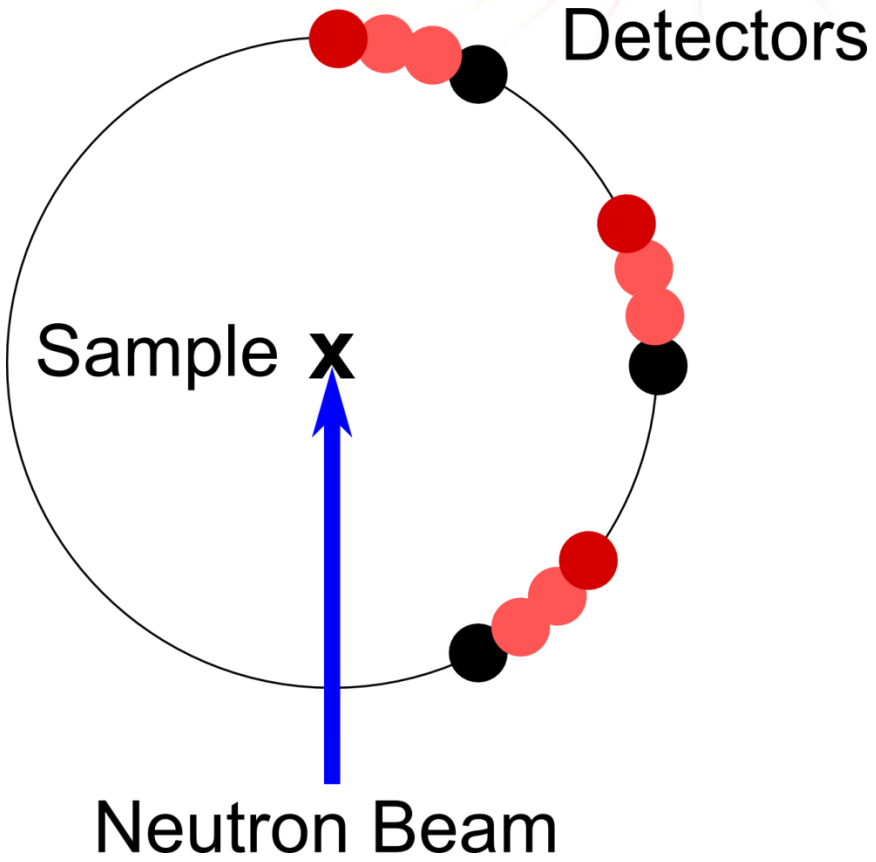

Future Work, Summary and Conclusions

- SINE2020 funding for Mantid on continuous sources
- Data analysis work at the ILL
  - QENS
  - Simulation
- Mantid adoption under way at the ILL…
- … but lots still a long way to go

Thanks for listening!