Mantid Now and in the Future

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Mantid is a software framework to provide reduction and analysis of neutron and muon data[1]. It is developed as an open source project driven by a partnership between the neutron and muon facilities at ISIS and the neutron sources at Oak ridge National Laboratory (ORNL). Interested parties from the ILL, PSI, and ESS have also contributed to the project.

The Framework consists of modular C++ and Python algorithms that can be assembled together to provide flexible reduction and analysis workflows for each instrument type. Predefined reduction workflows are in place for most of the instrument types available at the SNS and ISIS. Work is progressing on updated algorithms that provide a more advanced reduction procedure and to advance the analysis and visualization beyond what has been previously done for neutron and Muon experiments. On the visualization side, this framework leverages the volume visualization package Paraview.

This framework provides multiple options for the users to interact with the software. The most common method is a Gui, built off a fork of the Qtiplot code base, named MantidPlot. In addition, many users are accessing the framework as a Python library. This method allows full integration with popular scientific python libraries, such as numpy, scipy[2] and matplotlib[3]. As a demonstration of this method to access the framework, a prototype project using a Qt GUI and matplotlib to provide an Mslice like interface will be described.

References

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