**Mantid data reduction and visualization at SNS and HFIR**

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The large amount of data collected at the Spallation Neutron Source has brought forward new opportunities for science, but also present challenges for data reduction and visualization. A joint collaboration between ISIS and ORNL, Mantid[1.] is a data reduction, visualization, and analysis framework for neutron and muon experiments. Most instruments at ORNL two neutron sources (SNS and HFIR) are already using Mantid as part of the data processing.

This framework allows user implemented workflows, which include customized algorithms and visualization tools. Users have multiple options of interacting with the program, from graphical user interfaces, to Python scripts, including the ability to generate a script based on an initial use of the GUI. One of the main new features of this framework is the possibility to use event data. This allows using novel techniques, such as asynchronous parameter scans, including continuous angle or temperature, and pump probed experiments, like pulsed magnets. On the visualization side, the use of inelastic neutron scattering in condensed matter or chemistry requires mapping of the scattering intensity as a function of energy transfer, one to three dimensional momentum transfer, and/or other parameters, such as temperature, pressure or magnetic field.

We will present several use cases for Mantid for neutron diffraction, inelastic scattering, SANS, and reflectometry.

**References**

1. [www.mantidproject.org](http://www.mantidproject.org/)

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