

Abstract Given the complexity and diversity of the raw data from experiments conducted at the Spallation Neutron Source (SNS), it is beneficial to visually dissect and inspect these raw data using a variety of graphical plots. Such capabilities are useful for instrument scientists and users to quickly assess and validate experiment data, as well as to determine any errors or inconsistencies during the experiment, right after the data are collected and translated into event NeXus format (see poster *Event NeXus file creation Tool at SNS* for a detailed discussion on the event NeXus format).

This poster presents SNS Explorer, an event NeXus browser and visualization tool currently under development. Plots below are some sample outputs of SNS Explorer, including event time of flight with index, proton charge with time, and sample temperature with time. Overplotting sample environment logs such as temperature, pressure, and magnetic field will also be possible in a future release.

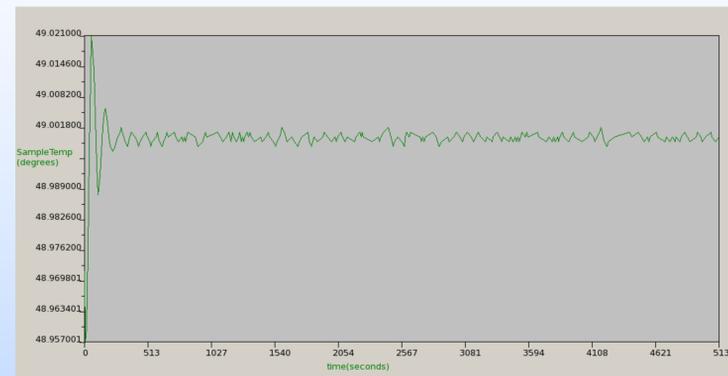
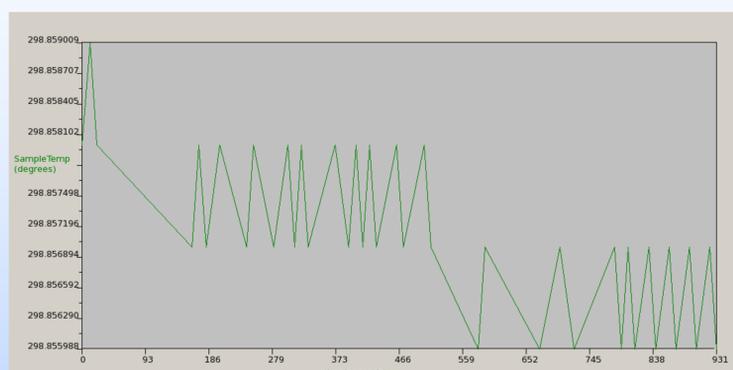
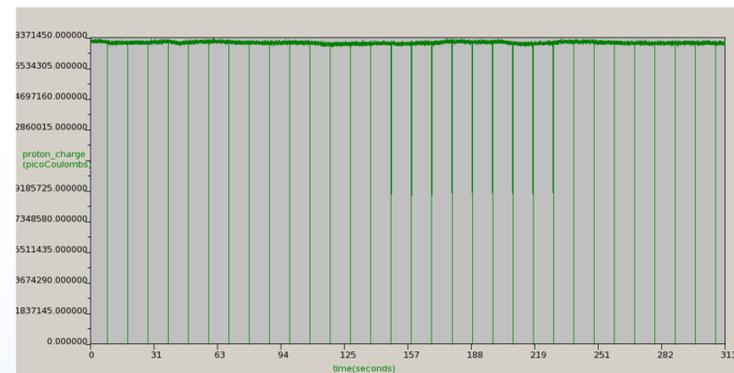
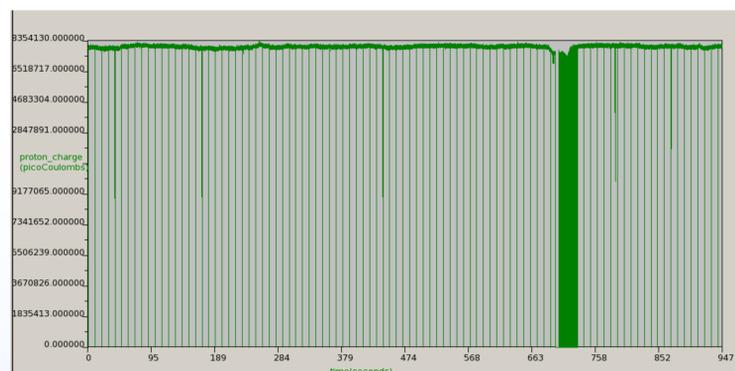
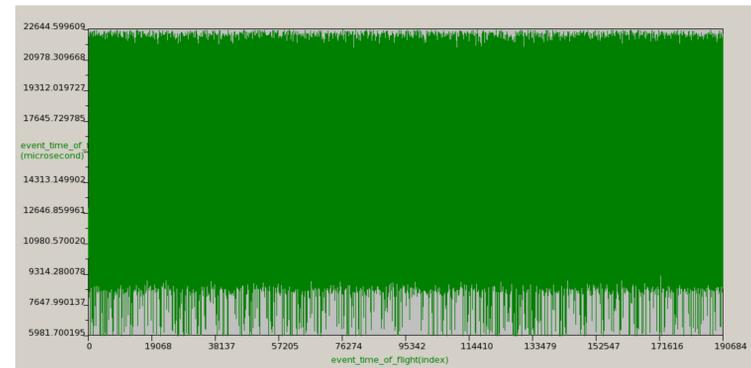
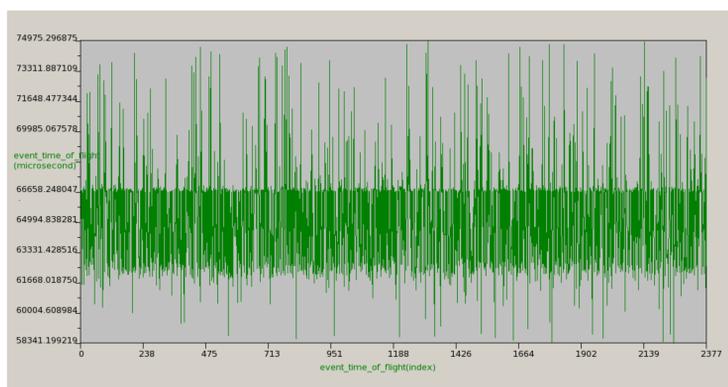
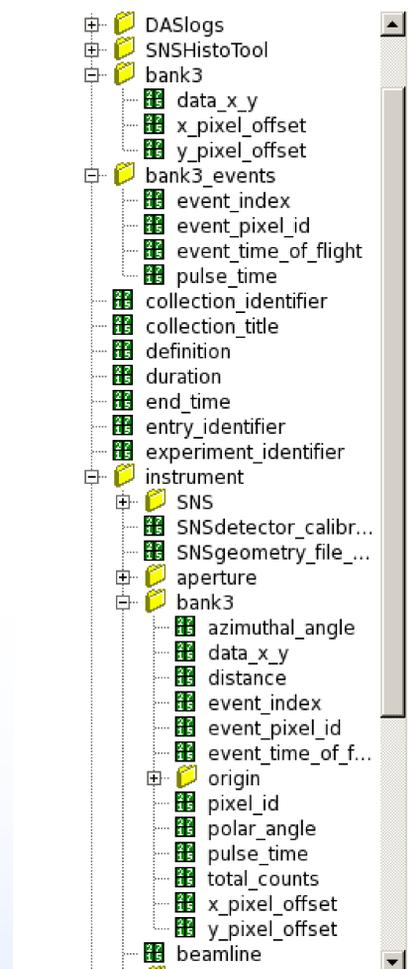
Algorithm for file traversal. The same algorithm that NXtraverse uses for file traversal (see poster).

Display. The QT framework was used to develop the GUI (Graphical User Interface) of SNS Explorer. Data is first viewed in a tree-like interface. Then a user can choose to load certain data and visualize them in a variety of ways.

Plots can be generated at this moment include:

- Event time of flight with index (two plots on the top)
- Proton charge with time (two plots in the middle)
- Sample temperature with time (two plots at the bottom)
- Frequency with time
- Pulse time with index

(Plots below are generated from recent ARCS, BSS, and CNCS event NeXus files)



NeXus



Links

<http://www.nexusformat.org/>
<http://www.hdfgroup.org/>
<http://www.sns.gov/>

1 Space Research Software 2 Data Management Group Neutron Scattering Science Division, ORNL

