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User Friendly Software for Single Crystal, TOF Neutron Scattering Data Visualization and Reduction.

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Single crystal time-of-flight neutron scattering experiments provide information about three dimensional regions in reciprocal space. Modern, user friendly software with powerful interactive visualization techniques is necessary to efficiently visualize and reduce data from such experiments. This paper describes a new system of visualization tools and "wizards" that have recently been designed and implemented for dealing with such data. The visualization tools include coordinated 3D views of reciprocal space, arbitrary slices through reciprocal space in terms of miller indices or "Q", 3D views of the detectors, etc. The wizard system provides a user friendly interface that guides the user through the process of finding and indexing peaks, finding the orientation matrix and calculating integrated intensities. This software was developed in the context of the Integrated Spectral Analysis Workbench (ISAW) project at the Intense Pulsed Neutron Source Division of Argonne National Laboratory, with support from the National Science Foundation.