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CT Scan Visualizer

Building upon the Neutron Data Interpretation Platform (NDIP) and the Neutrons Open Visualization and Analysis (NOVA) framework developed at Oak Ridge National Laboratory (ORNL), we have developed a VTK-based interactive software tool, CT Scan Visualizer, for performing rapid visualization of data produced by imaging instruments such as VENUS at the Spallation Neutron Source (SNS).

This data commonly takes the form of a stack of 2D Tagged Image File Format (TIFF) images, so the stack represents a 3-dimensional volume. Our tool can take several hundred gigabytes of this type of data and display an interactive volume rendering and slices of the data in a few seconds.

While existing tools can provide detailed volume rendering and slicing, this achieves a level of responsiveness and integration with our facilities to open the possibility to perform on-the-fly volume rendering as instruments produce data.

The tool allows the user to browse through their experiments and select the data they want to display. It additionally provides controls for swapping between rendering modes and thresholding the data to be visualized.

In this talk, we will demonstrate the application, detail how it works, and discuss potential future opportunities.

Topical Area

Emerging research and multimodal techniques

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