



Contribution ID: 153

Type: **Oral Presentation**

## **Advances in event based data structures for neutron scattering experiments**

*Tuesday, 15 October 2019 14:55 (25 minutes)*

This presentation will review and expand upon existing work in data processing made available using event mode measurements. Most spallation neutron sources in the world have data acquisition systems that provide event recording. The new science that is enabled by utilizing event mode has only begun to be explored. In the past these studies were difficult to perform because histograms forced either dealing with large chunks of time, or a large number of files. With event-based data collection, data can be explored and rebinned long after the measurement has completed. This talk will review principles of event data and how the method opens up new possibilities for in situ measurements, highlighting techniques that can be used to explore changes in the data and model independent methods of grouping data via clustering methods.

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**Session Classification:** Software

**Track Classification:** Software