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Recent developments in the MSlice software package

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MSlice1 is a Python-based tool for performing and visualizing slices and cuts of inelastic neutron scattering data. It can be used both as a standalone application and as an interface of the data reduction software Mantid2.

We provide an update on recent developments in the MSlice software package as well as on the new packaging system used for deploying the standalone version of MSlice.

This involves improvements for the GUI such as a new plot manager tab, enhanced interaction with Mantid by making MSlice workspaces available in Mantid and upgrades to the script generation.

New functionalities also include various improvements for calculating and displaying cuts. It is now possible to convert intensity information for cut plots. In addition, it is now also possible to overplot powder reflections from materials such as Aluminium, Copper, Niobium and Tantalum.

MSlice differentiates between data from instruments with and without position-sensitive detectors. For both types of data there are now two different cut operations adapted to the respective data type available. In addition to the original method, the rebin cut algorithm, an integration cut algorithm was introduced. Unlike the rebin cut algorithm, this integration cut algorithm will not assume constant signals that can be extrapolated over regions with less data and is therefore more suitable for integration over energy.

Another area of enhancement is the migration to Conda packaging for the cross-platform deployment of MSlice. Both developers and users profit from the ability to install several versions of standalone MSlice applications independently in separate Conda environments.

1. <https://mantidproject.github.io/mslice/>
2. <https://mantidproject.org/>

Email address of presenting author

silke.schomann@stfc.ac.uk

Primary author: Dr SCHOMANN, Silke (ISIS)

Presenter: Dr SCHOMANN, Silke (ISIS)

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