

Brief description of all menu items

All available menu items are described here. Use this document if you are looking for a brief overview of what each menu item does. More detailed information or even user manuals for the various program modules are available elsewhere.

1 File Menu.

1.1 Select raw data directory

Use this to define a DAVE wide directory where program modules will search for raw (unprocessed) data files.

1.2 Select working directory

A DAVE wide output directory for retrieving/saving processed files can be defined using this menu.

1.3 Display directories

View the current settings for the raw and working directories.

1.4 Select pdf reader

Choose an application for viewing PDF documents. Much of the documentation within DAVE is provided in PDF format.

1.5 Exit

Exit DAVE.

2 Data Reduction Menu.

2.1 DCS

2.1.1. Reduce DCS raw data

Data reduction programs for DCS raw (.dcs) data.

2.1.2. DCS Mslice

Data reduction, visualization and analysis of DCS data - an extension of the original Matlab MSLICE program.

2.2 FCS

2.2.1. Reduce FCS raw data

Data reduction program for FCS raw data.

2.2.2. Help on FCS reduction

View user manual on FCS data reduction.

2.3 HFBS

2.3.1. Reduce .HFBS data

Data reduction program for HFBS raw (.hfbs) data.

2.3.2. Reduce .HSCN data

Data reduction program for HFBS raw (.hscn) data.

2.3.3. Convert DAVE to CON

2.3.4. Help on HFBS reduction

View user manual on HFBS data reduction.

2.4 TAS

2.4.1. TASXP

A simple TAS data reduction and quick plotting and fitting program.

2.4.2. ICP

Data reduction program for TAS (.bt2, .bt7, .bt9) data.

2.5 FANS

2.5.1. Reduce FANS data

Data reduction program for FANS raw (.bt4) data.

2.6 ASCII data

2.6.1. ASCII data->DAVE

Read ascii data files and convert to DAVE (.dave) format.

3 Visualization Menu.

3.1 Trifenestra (Three Windows)

Visualization program which simultaneously displays a 2D view of the data as well as x and y slices at the current cursor location.

3.2 Simple image slicer

Similar to Trifenestra – but also displays a zoomed region about the cursor position.

3.3 Data Browser

The main visualization program in DAVE. Can produce customizable 2D (image, contour, surface) views and 1D (multi-) plots of data. Also numerous data operations (scaling, combining, etc) can be performed.

3.4 DAVE PEEK

Takes a snapshot view of the current run for various instruments at the NCNR. Only works when DAVE is run locally within the NCNR.

4 Data Analysis Menu.

4.1 RAINS (Refinement Analysis on Inelastic Neutron Spectra)

Perform least-squares fit of 2D data using 2D models. Various predefined model functions are included.

4.2 PAN (Peak Analysis)

Perform least-squares fit of 1D data using 1D models. Various predefined models are included as well as the ability to create user defined ones. Tools are included to view/analyze/save the fitted parameters/results.

5 Tools Menu.

5.1 General Tools

5.1.1. Data Tools

5.1.1.1. Examine data directories

Utility that displays information for all files in a specified instrument data directory. Limited search capabilities.

5.1.1.2. Create a DAVE data summary file

Reads specified information from specified DAVE files and writes this information to an output summary file.

5.1.1.3. Examine a DAVE datafile

Used to examine the contents of a DAVE file, including derived quantities.

5.1.1.4. View a DAVE datafile treatment

Displays the contents of a DAVE datafile treatment pointer.

5.1.1.5. Save DAVE data in ASCII format

Writes the specified quantities from a DAVE file to an output ascii file.

5.1.1.6. Rebin DAVE data file(s)

Rebins the data contained within a DAVE file, and its error, in x or y or both.

5.1.1.7. A look at the current DAVE structure

A look at the current DAVE structure; shows data array dimensions.

5.1.1.8. Spy on Specifics

Examine the contents of a .dave file that was generated using 'Data Reduction -> ICP'.

5.1.2. Miscellaneous

5.1.2.1. Self-shielding correction application

Calculates self-shielding factor as function of scattering angle and total cross sections for incident and scattered neutrons, for multiple annular sample/container setup.

5.1.2.2. Neutron calculator

Calculates the dynamic range (Q,E) for scattered neutrons for a given E_i/E_f (direct/inverse geometry) and range of scattering angles.

5.1.2.3. Points Digitizer (POD)

Digitizer for extracting/saving/displaying data points from an (jpeg) image

5.1.2.4. Hindered rotor calculators

5.1.2.4.1. Dynamic rigid rotor

5.1.2.4.2. Methyl rotor

5.2 DCS Tools

5.2.1. Planning and execution

5.2.1.1. Intensity and resolution

Creates plots of intensity and resolution as a function of wavelength for DCS.

5.2.1.2. Experiment planner

Given an incident wavelength, chopper speed ratio, resolution mode and "tsdmin", displays the accessible region in (Q,omega), time channel

information, etc etc.

5.2.1.3. Calculate sample heights

An aid to planning how to mount samples at the correct height within a displax (closed cycle refrigerator).

5.2.1.4. Chopper phase calculator

Given an incident wavelength, chopper speed ratio, resolution mode and "tsdmin", calculates chopper phases and delays.

5.2.1.5. "Revenge" calculator

Given a set of chopper phases and speeds, this application attempts to back-calculate (reverse engineer) the incident wavelength, chopper speed ratio, and resolution mode.

5.2.1.6. Detector information

Displays information for individual DCS detectors, including polar and azimuthal angles.

5.2.2. Data Tools

5.2.2.1. Examine DCS data directories

Utility that displays information for all files in a specified DCS data directory. Limited search capabilities. (see 5.1.1.1)

5.2.2.2. Create a DCS raw data summary file

Reads specified information from specified .dcs raw data files and writes this information to an output summary file.

5.2.2.3. Examine a DCS raw data file

Used to examine the contents of a .dcs file, including derived quantities.

5.2.2.4. Save DCS raw data in ASCII format

Writes the specified quantities from a .dcs raw data file to an output ascii file.

5.2.2.5. Save DCS raw data in DAVE format

Writes all of the contents of a .dcs file as a DAVE file.

5.2.2.6. Convert sqw_i files to DAVE format

Converts sqw_i files to DAVE format

5.2.2.7. Plot single crystal alignment files

Plots the intensity in selected detectors and time channels as a function of a motor angle for a series of DCS runs (e.g. a rocking curve for a single crystal)

5.2.3. DCS Multiplot utility

Creates multiple 1-d plots of DCS raw data or data in DAVE files. Several useful features are specific to time-of-flight data, e.g. conversion from time to energy scale.

5.2.4. Miscellaneous

5.2.4.1. Plot DCS run information

Displays selected run information for a set of DCS runs, e.g. wavelength, sample temperature, run duration, detector count rate, etc.

5.2.4.2. Perform raw data sanity checks

Checks raw data files for various types of conditions. In particular, all instances of data bit flips are reported.

5.2.4.3. Piecewise constant energy width time channels

Generates, and writes to a file, time channel width information corresponding

to piecewise constant energy widths

5.2.4.4. Piecewise constant time width time channels

Generates, and writes to a file, time channel width information corresponding to piecewise constant time widths

5.3 HFBS Tools

5.3.1. Databrowser

5.3.2. FWS Analysis

5.4 TAS Tools

5.4.1. Spurion calculator

5.5 FANS Tools

5.5.1. Gaussian98 Calculation

Utility to calculate neutron vibrational lineshape from a Gaussian 98 logfile.

5.5.2. FANS Monochromator

Simple utility to help align the monochromator on FANS.

5.5.3. FANS Data Browser

Cycle through all FANS data in a specified directory and display the total counts.

6 Help Menu.

6.1 Menu descriptions

Display this file.

6.2 User manuals

Self-contained user manuals for various DAVE modules.

6.3 About DAVE

Brief information about the current version of the software.