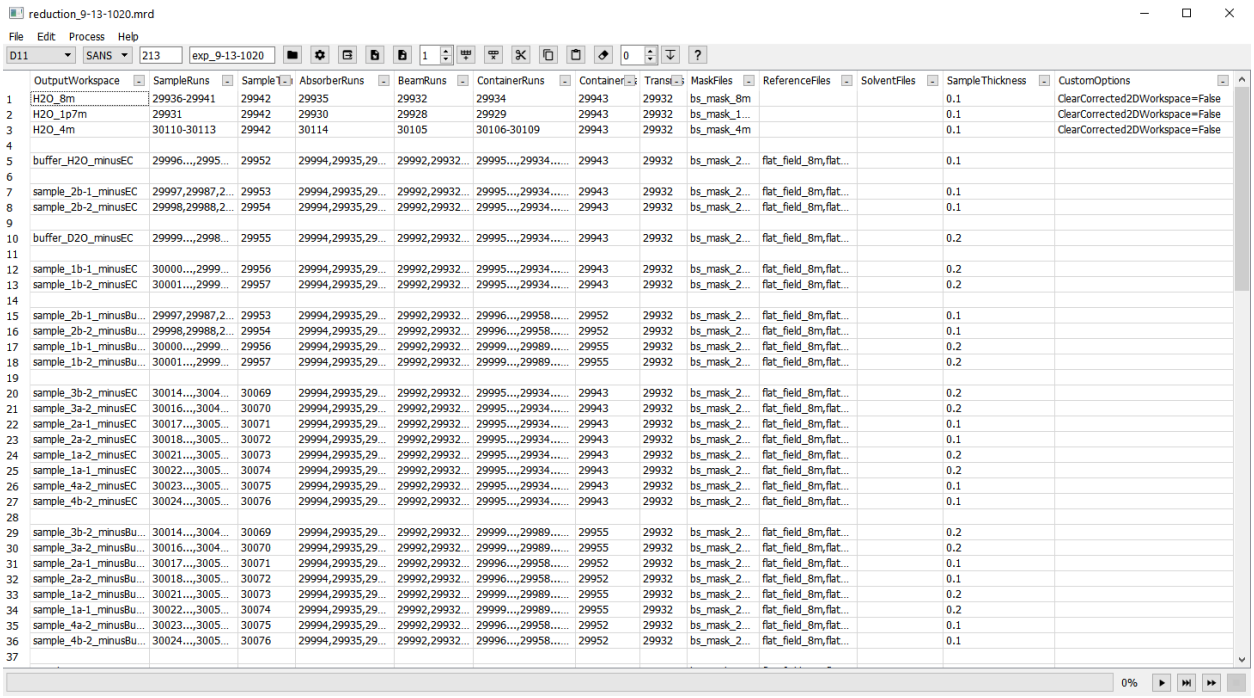
Mantid user interfaces at ILL

The only "special" interface that we are planning to use/develop is DrILL (see https://docs.mantidproject.org/nightly/interfaces/ILL/DrILL.html)

Basically it is just a spreadsheet serving as an interface to the ILL AutoProcess algorithms, which perform the full data reduction. Thus instead of calling repeatedly the AutoProcess algorithm or writing a python script to do it, the user fills an "excel-like" table like this:



	OutputWorkspace	SampleRuns	SampleT	AbsorberRuns	BeamRuns	ContainerRuns	Container	Trans	MaskFiles	ReferenceFiles	SolventFiles	SampleThickness	CustomOptions
1	H2O_8m	29936-29941	29942	29935	29932	29934	29943	29932	bs_mask_8m			0.1	ClearCorrected2DWorkspace=False
2	H2O_1p7m	29931	29942	29930	29928	29929	29943	29932	bs_mask_1...			0.1	ClearCorrected2DWorkspace=False
3	H2O_4m	30110-30113	29942	30114	30105	30106-30109	29943	29932	bs_mask_4m			0.1	ClearCorrected2DWorkspace=False
4													
5	buffer_H2O_minusEC	29996...,2995...	29952	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.1	
6													
7	sample_2b-1_minusEC	29997,29987,2...	29953	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.1	
8	sample_2b-2_minusEC	29998,29988,2...	29954	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.1	
9													
10	buffer_D2O_minusEC	29999...,2998...	29955	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.2	
11													
12	sample_1b-1_minusEC	30000...,2999...	29956	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.2	
13	sample_1b-2_minusEC	30001...,2999...	29957	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.2	
14													
15	sample_2b-1_minusBu...	29997,29987,2...	29953	29994,29935,29...	29992,29932...	29996...,29958.....	29952	29932	bs_mask_2...	flat_field_8m,flat...		0.1	
16	sample_2b-2_minusBu...	29998,29988,2...	29954	29994,29935,29...	29992,29932...	29996...,29958.....	29952	29932	bs_mask_2...	flat_field_8m,flat...		0.1	
17	sample_1b-1_minusBu...	30000...,2999...	29956	29994,29935,29...	29992,29932...	29999...,29989.....	29955	29932	bs_mask_2...	flat_field_8m,flat...		0.2	
18	sample_1b-2_minusBu...	30001...,2999...	29957	29994,29935,29...	29992,29932...	29999...,29989.....	29955	29932	bs_mask_2...	flat_field_8m,flat...		0.2	
19													
20	sample_3b-2_minusEC	30014...,3004...	30069	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.2	
21	sample_3a-2_minusEC	30016...,3004...	30070	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.2	
22	sample_2a-1_minusEC	30017...,3005...	30071	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.1	
23	sample_2a-2_minusEC	30018...,3005...	30072	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.1	
24	sample_1a-2_minusEC	30021...,3005...	30073	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.2	
25	sample_1a-1_minusEC	30022...,3005...	30074	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.2	
26	sample_4a-2_minusEC	30023...,3005...	30075	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.1	
27	sample_4b-2_minusEC	30024...,3005...	30076	29994,29935,29...	29992,29932...	29995...,29934.....	29943	29932	bs_mask_2...	flat_field_8m,flat...		0.1	
28													
29	sample_3b-2_minusBu...	30014...,3004...	30069	29994,29935,29...	29992,29932...	29999...,29989.....	29955	29932	bs_mask_2...	flat_field_8m,flat...		0.2	
30	sample_3a-2_minusBu...	30016...,3004...	30070	29994,29935,29...	29992,29932...	29999...,29989.....	29955	29932	bs_mask_2...	flat_field_8m,flat...		0.2	
31	sample_2a-1_minusBu...	30017...,3005...	30071	29994,29935,29...	29992,29932...	29996...,29958.....	29952	29932	bs_mask_2...	flat_field_8m,flat...		0.1	
32	sample_2a-2_minusBu...	30018...,3005...	30072	29994,29935,29...	29992,29932...	29996...,29958.....	29952	29932	bs_mask_2...	flat_field_8m,flat...		0.1	
33	sample_1a-2_minusBu...	30021...,3005...	30073	29994,29935,29...	29992,29932...	29999...,29989.....	29955	29932	bs_mask_2...	flat_field_8m,flat...		0.2	
34	sample_1a-1_minusBu...	30022...,3005...	30074	29994,29935,29...	29992,29932...	29999...,29989.....	29955	29932	bs_mask_2...	flat_field_8m,flat...		0.2	
35	sample_4a-2_minusBu...	30023...,3005...	30075	29994,29935,29...	29992,29932...	29996...,29958.....	29952	29932	bs_mask_2...	flat_field_8m,flat...		0.1	
36	sample_4b-2_minusBu...	30024...,3005...	30076	29994,29935,29...	29992,29932...	29996...,29958.....	29952	29932	bs_mask_2...	flat_field_8m,flat...		0.1	
37													

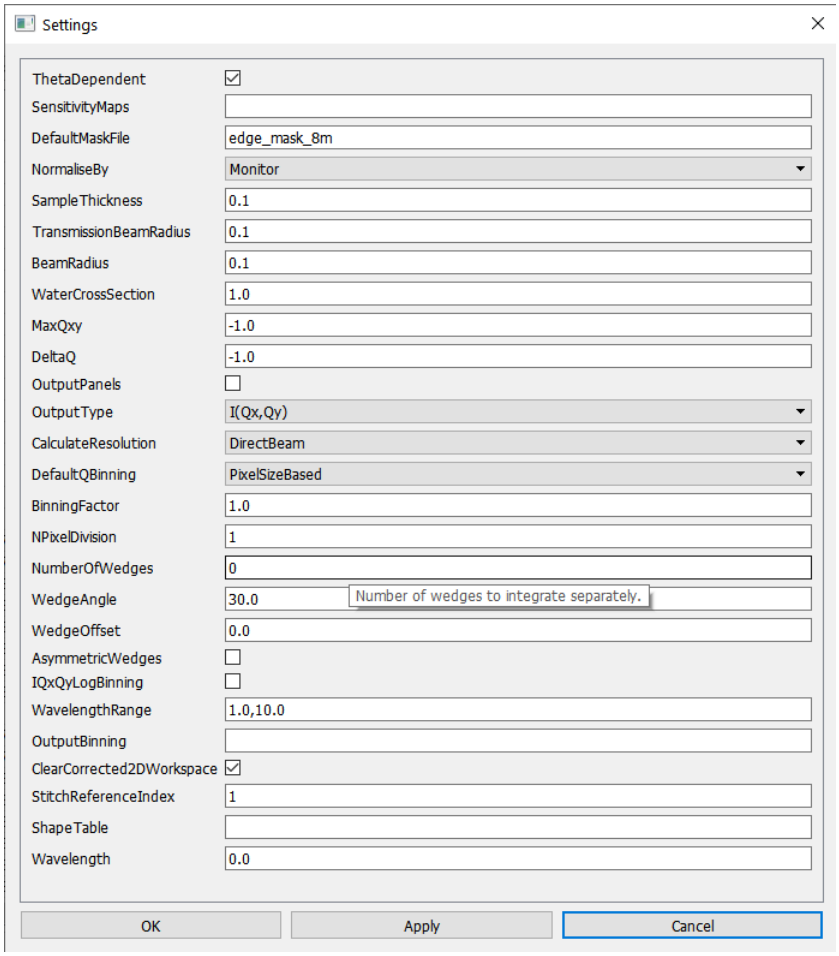
Aims:

1. Present a global view of a whole experiment in a single table showing the run numbers and main files used in the reduction.
2. Hide the complexities of the equivalent script needed to repeat the same treatment for hundreds of samples for some users who are not comfortable with python.

Limitations:

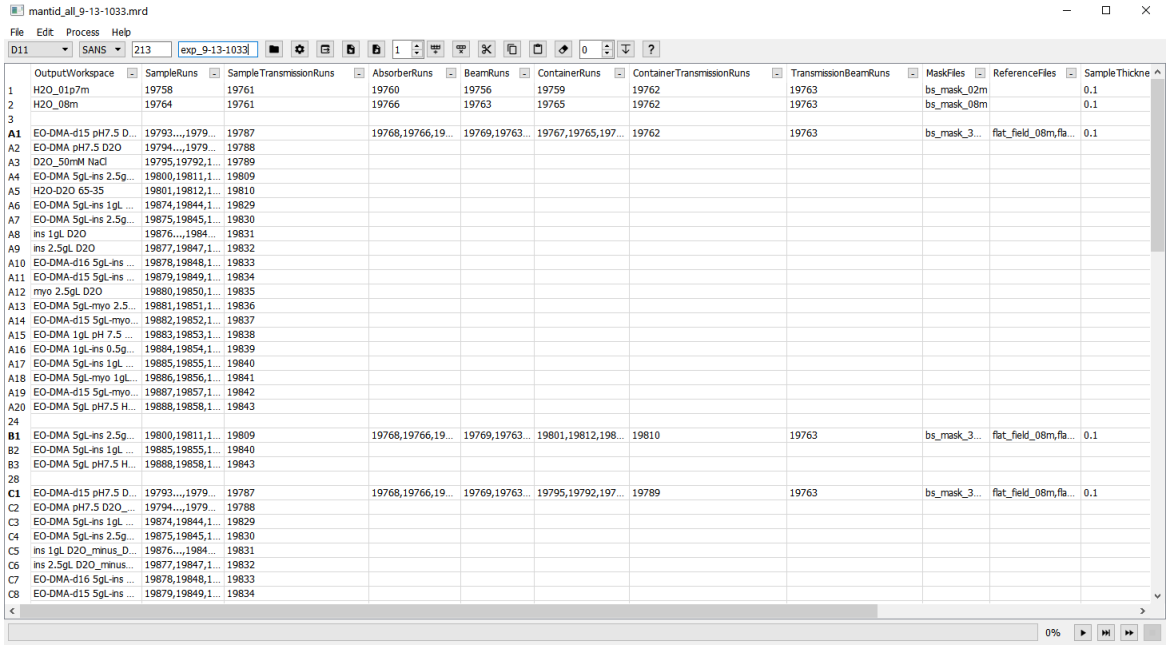
1. No visualization. Final results are saved as Mantid workspaces and as files (NeXus or Ascii), so in order to see them the user needs to go back to the workbench and use the standard tools provided by Mantid (show instrument / slice viewer / plot /superplot), depending on the type of data.
2. No customized / responsive interface (e.g. Grasp-like for those who know Grasp). The settings interface appears as a list of all the available input parameters and the reduction is run using those. If the user decides to change something, he/she needs to modify the needed values and run again the full table or the selected rows.

The columns available and their names depend on the technique/instrument, and they can be customized (removed from the table if not needed, contracted/expanded, etc.). Each row corresponds to one sample (in the SANS example above each sample is measured at 3 different detector distances and all of them are reduced in a single call to SANSILLAutoProcess). Global settings to be applied to each of the rows are defined in the menu:



“Special” rows needing different parameters can be reduced in the same table by changing those global parameters using the CustomOptions column.

Samples that share some of the inputs (e.g. same background) can be grouped together, so the needed information is written only for the first sample in the group:



We are currently working in creating a second table associated to this one, where the parameters of each group are displayed and can be modified: