



Data Processor UI

- Design document
 - Execute complex batch-processing via DataProcessorAlgorithms
 - Technique areas that have/need similar functionality
 - SANS (ANSTO + ISIS), Powder (SNS), SCD (SNS)
 - Reflectometry (Polref) GUI

ISIS Reflectometry (Polref)

Reflectometry Edit

Search Runs

Instrument: INTER

Investigation Id:

Description Search

Process Runs

	Run(s)	Angle	Transmission Run(s)	Q min	Q max	dQ/Q	Scale	Group	Options
1	13460	0.7	13463,13464	0.01	0.06	0.04	1	1	
2	13462	2.3	13463,13464	0.035	0.3	0.04	1	1	
3	13469	0.7	13463,13464	0.01	0.06	0.04	1	2	
4	13470	2.3	13463,13464	0.035	0.3	0.04	1	2	

0% Transfer

0% Instrument: INTER Output Notebook Process



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Data Processor UI

- How to create a table:
 - WhiteList
 - Pre-processing alg. (map)
 - Processing algorithm
 - Post-processing algorithm

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Stage	Algorithm	Global Options
Pre-process	Plus	<input type="text"/>
Pre-process	CreateTransmissionWorkspaceAuto	<input type="text"/>
Process	ReflectometryReductionOneAuto	<input type="text"/>
Post-process	Stitch1DMany	<input type="text"/>

0% Instrument: INTER ☐ Output Notebook

```
DataProcessorWhiteList whitelist;  
whitelist.addElement("Run(s)",  
                    "InputWorkspace", "Sample runs to be processed");  
whitelist.addElement("Angle", "ThetaIn",  
                    "Angle used during the run");  
whitelist.addElement("Transmission Run(s)", "FirstTransmissionRun",  
                    "Transmission run(s) to use to normalise the sample runs");
```



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Pre-process	CreateTransmissionWorkspaceAuto	
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Post-process	Stitch1DMany	

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```
// Pre-processing instructions as a map:
// Keys are column names
// Values are pre-processing algorithms
std::map<std::string, PreprocessingAlgorithm> preprocessMap = {
    {"Run(s)",
     PreprocessingAlgorithm("Plus",
                           std::set<std::string>{"LHSWorkspace",
                                                  "RHSWorkspace",
                                                  "OutputWorkspace"}))},
    {"Transmission Run(s)",
     PreprocessingAlgorithm("CreateTransmissionWorkspaceAuto",
                           std::set<std::string>{"FirstTransmissionRun",
                                                  "SecondTransmissionRun",
                                                  "OutputWorkspace"}))};
```



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Stage	Algorithm	Global Options
Pre-process	Plus	
Pre-process	CreateTransmissionWorkspaceAuto	
Process	ReflectometryReductionOneAuto	
Post-process	Stitch1DMany	

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```
// The data processor algorithm
ProcessingAlgorithm processor(
    "ReflectometryReductionOneAuto",
    /*The blacklist*/
    std::set<std::string>{
        "ThetaIn",
        "ThetaOut",
        "InputWorkspace",
        "OutputWorkspace",
        "OutputWorkspaceWavelength",
        "FirstTransmissionRun",
        "SecondTransmissionRun",
        ...});
```

```
// The post-processing algorithm
PostprocessingAlgorithm(
    "Stitch1DMany",
    "IvsQ_",
    /*The blacklist*/
    std::set<std::string>{
        "InputWorkspaces",
        "OutputWorkspace"});
```