SAngler Ver. 1.0.0 Simple Manual

1. Mask

    (1) Load an image data and Click [Draw] at Mask Tab

    (2) Check [Less than zero] in Set value if you analyze the PILATUS data.

    (3) Make a square mask if you need. Input the pixel position of the upper left corner and the lower right corner.

    (4) Click [Set] to determine. The color of the mask region changes to yellow.

    (5) Click [Save] to make the mask file. The mask color changes from yellow to green. You can use this mask file when you return to your laboratory.

2. Calibration

    (1) Select the detector type, PILATUS 100K ~ 2M.

    (2) Load the image of Ag behenate and Click [Draw].

    (3) Click and change AVE value to 500.

    (4) Check "Refine BeamCenter" and "Refine Wavelength or Camera distance".

    (5) Input Wavelength and the initial Camera distance, and check "Camera distance".

    (6) Check on/off the order number to fit to your Ag behenate image.

    (7) You can see the prediction rings when checking "Display". If the prediction ring seems to be different from the recorded ring, optimize the values of the beam center and the camera distance.

    (8) Click [Start] for the automatic calibration.

    (9) After the optimization, click "Save" to save the result. You can use this "cal" file when you return to the laboratory.

3. Average

    (1) Set the input data path.

    (2) Mask data is automatically set.

    (3) Set the output data path.

    (4) Choose the unit of 1st Column.

    (5) If you want to normalize the scattering intensity by the incident beam intensity, load the counter log file. Facility: PF or SPring-8(BL45XU), C2 or MIC up=the intensity just before the sample.

    (6) Data processing -All

        Individual: All the images in the input path are averaged individually.

        Average: All the images in the input path are averaged to one file.

(7) Data processing –Range selection
  i. Click [Add] to select the files. The other window opens.
  ii. Select the files you want to process, and click [>>] to decide the file range.
  iii. Check Individual and/or Average.
      Individual: The selected images are averaged individually.
      Average: The selected images are averaged to one file.
  iv. Input the average file name when you perform Average.
  v. Click [Entry] to decide.
  vi. Repeat from i to v if you want to process the other file set.
(8) Click [Run] to perform the circular average.

4. Subtraction (at the bottom side of Subtraction tab)
  (1) Set the output path.
  (2) Set one background file from [Browse]. You can set the file by the drug-and-drop to the listbox.
  (3) Set the sample files from [Browse]. You can set the multiple files by the drug-and-drop to the listbox.
  (4) Input the concentration(Conc.) value if you need. This value will be recorded in the header of the output file. SAngler can load this value at the analysis.
  (5) If you check "Use PSV", the data of an empty cell and air are also needed (PSV=the partial specific volume). Please perform absorption correction using the beam intensity behind the sample (C3 or MIC down).
  (6) Click [Subtract] to run the subtraction.

5. Analysis
  (1) Drag and Drop the files to the listbox ([Browse] is also available.).
  (2) Select [LogY] or [Guinier] or [Kratky] to make each plot.
  (3) [View]-[Graph settings]: Modification of a plot type and range of each axis.
  (4) [Tools]-[Normalization]: Normalization by concentrations and the data in the displayed or specified x-axis range.
  (5) New data can be loaded by the drag-and-drop to the file list ([File]-[Input]).
  (6) The data can be outputted to the form of each graph. The graph can be also saved as the JPG file.
  (7) [Tools]-[Guinier analysis]: In the case of Guinier plot, user can perform the linear approximation by the manual operation basically.
  (8) If you have installed ATSAS, you can use "autorg.exe" of ATSAS. SAngler can perform autorg.exe and display the result (The output result of autorg.exe is also saved to the data folder.).

(9) The result of guinier analysis is saved from [File]-[Output]-[Output result data]. This
     file can load to Excel directly.