

BioXAS-Imaging Beamline Data Export Guide

At the BioXAS-Imaging beamline, three types of data are collected:

1. 2D elemental distribution scans
2. XAS scans in transmission mode
3. XAS scans in fluorescence mode

If you are on-site, please ask the beamline staff for access to a designated computer. For remote access, separate instructions for connecting to the computer using NoMachine will be provided by the beamline staff.

Note: Please always coordinate with beamline staff before remotely connecting to any computer for data export.

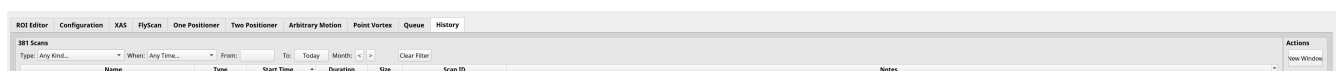
Once connected, the PyAcq client should be available on the connected computer. Click the **Login** button and enter your project name as the username (case-sensitive) and the password provided by the beamline staff.



This will open a PyAcq session displaying all previously recorded data associated with your project number from current and past beamtime sessions.

1. Exporting 2D Elemental Distribution Maps

The 2D scans are listed as **Flyscan** entries. In the **History** tab, select **Type: Flyscan** instead of **Type: Any Kind** to filter the list and display only 2D flyscans.



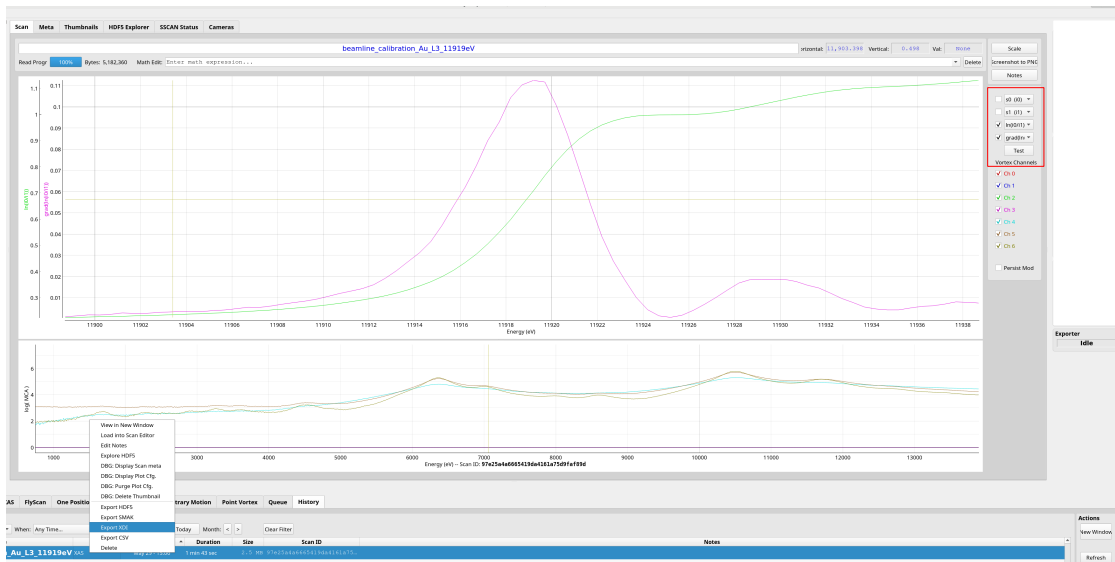
2. Exporting XAS Data Recorded in Transmission Mode

In the **History** tab, select **Type: XAS** instead of the default **Type: Any Kind** to filter the list and display only XAS data.



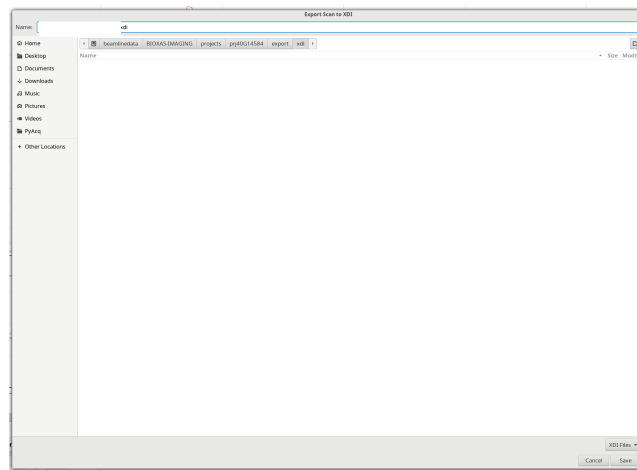
To obtain the correct view of your data, select the correct math operations, **ln(i0/i1)** and **grad(ln(i0/i1))**, in the corresponding tabs.

Note: The selection of a math operation has no effect on the exported data.



Right-click on the selected scan and choose **Export XDI** to export the XAS data. To export multiple scans, hold **Ctrl** and click each scan individually. Alternatively, click the first scan, hold **Shift**, and then click the last scan to select all scans in between. Once the desired scans are selected, right-click and choose **Export XDI** to export the XAS data.

A new window will pop up. Select the appropriate directory where you would like to export the data, and then proceed with the export.



The **Exporter** window will display the message "**Exporting...**", indicating that the data export process has started. Once the export is complete, the status will return to "**Idle**".

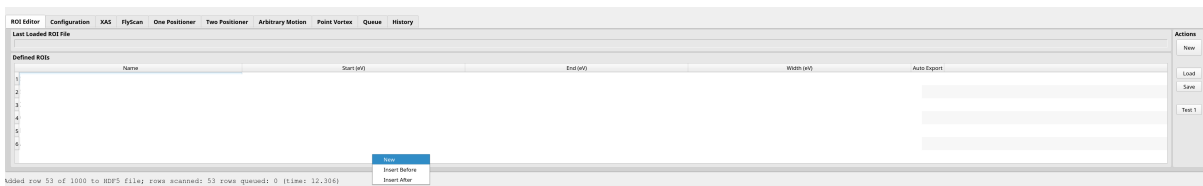


3. Exporting XAS Data Recorded in Fluorescence Mode

XAS data recorded in fluorescence mode requires an appropriate ROI (Region of Interest) to be selected on the fluorescence spectrum before the data can be exported.

It is important to use a consistent ROI across different datasets to maintain the integrity of comparative data analysis.

To configure an ROI, open the **ROI Editor** tab and right-click within the tab to create a new ROI.



Configure an ROI with an appropriate width based on the fluorescence peaks of interest and give it a name. The selected width should be chosen carefully to ensure accurate and consistent analysis. Multiple ROIs can be configured to target different elements of interest.

Select the appropriate XAS dataset from the **History** tab. In the corresponding fluorescence spectrum, right-click and place the ROI on the region of interest.

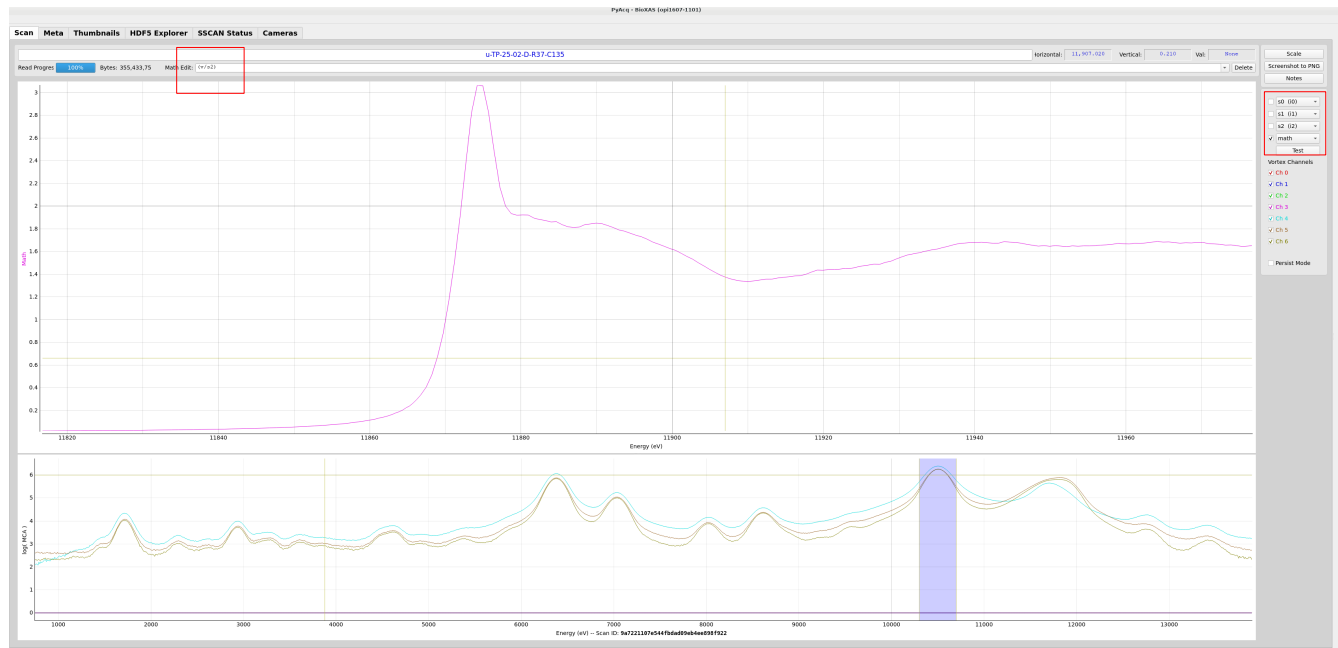


Once an ROI is placed, a shaded region will appear over the corresponding area of the spectrum, indicating the selected region of interest. Make sure the correct math operation is selected to obtain the appropriate view of the data. In addition, ensure that all **Vortex channels** are selected.

Note: The selection of a math operation and Vortex channels has no effect on the exported data. However, the correct choice of an ROI is important, so make your expert judgment on how wide your ROI has to be.

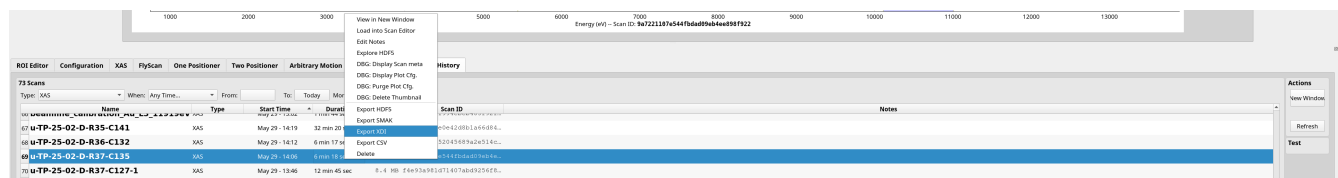
For **micro-mode**, common math options include: (v/s2), (np.log(v/s2)), or (grad(v/s2))

For **macro-mode**, common math options include: (v/s1), (np.log(v/s1)), or (grad(v/s1))

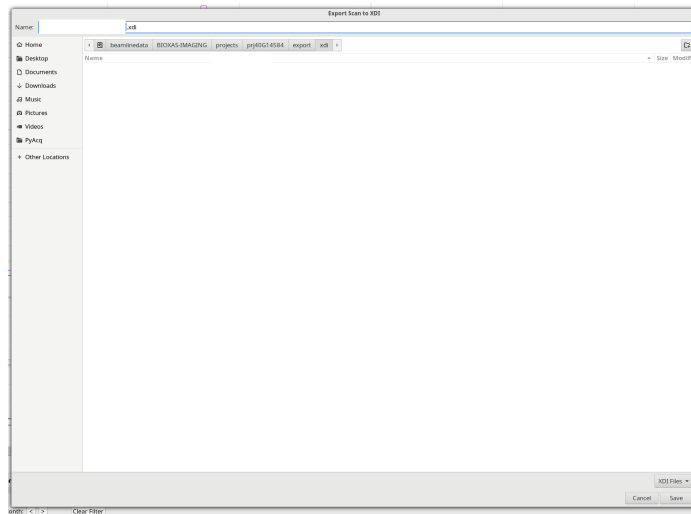


Once the appropriate ROI has been selected, right-click on the scan and choose **Export XDI** to export the XAS data. To export multiple scans, first ensure that an appropriate ROI has been applied to the fluorescence spectra. Then, hold **Ctrl** and click each scan individually to select multiple scans. Alternatively, click the first scan, hold **Shift**, and then click the last scan to select all scans in between.

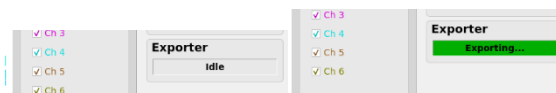
Once the desired scans are selected, right-click and choose **Export XDI** to export the XAS data.



A new window will pop up. Select the appropriate directory where you would like to export the data, and then proceed with the export.



The **Exporter** window will display the message **"Exporting..."**, indicating that the data export process has started. Once the export is complete, the status will return to **"Idle"**.



The exported data can then be downloaded to your local computer using the **Globus** platform. Separate instructions for using Globus and transferring data will be provided by the beamline staff. The exported data then can be downloaded to your local computer using Globus platform. Separate instructions on this shall be provided by the beamline staff.