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Enhancing user experience through GUIs and helper routines at MOGNO, the micro and nano tomography beamline at SIRIUS

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Since its inception at the first Brazilian synchrotron (UVX), the tomography beamline group has been concerned with the beamline's usability, recognizing that beamline operation can be a significant challenge for users. This has been carried forward to Mogno* (micro and nano tomography beamline at SIRIUS), being one of the cornerstones for user side software development, aimed at a diverse user pool that encompasses researchers from various fields and employing a range of tomography techniques (e.g., classic, phase contrast, zoom, and in-situ 4D).

To effectively support this heterogeneity of users and techniques, the development of Mogno's operation software stack focused on three key objectives: providing an easy-to-use set of tools, enabling user experiments; ensuring a smooth learning curve for new and experienced users; and enable the beamline's staff to efficiently prepare it for experiments. The resulting software stack is composed of a set of libraries and helper scripts built with Python (e.g. making sample alignment easier), that are run from GUIs (Graphical User Interfaces), developed with PyQt and PyDM. More recently, new possibilities for improving user experience are being explored, using web applications, which can lead to more accessible beamline experiment information.

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Footnotes

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