A Flexible System for End-User Data Visualisation, Analysis Prototyping and Experiment Logbook

WEPGF038

Elettra Sincrotrone Trieste

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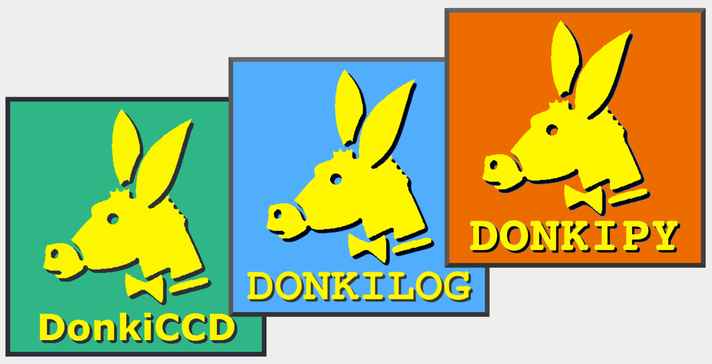
1. DonkiTools

At the present moment there are 32 experimental stations operating at the synchrotron Elettra and the free electron laser FERMI. For the user-oriented applications it is not unusual to meet the requirements that are common to a number of end-stations. For those, the most efficient solution would be a product with a high level of customization reusable in a multitude of situations. The Scientific Computing team had the chance to apply this strategy in different situations, building a collection of software tools called the **DonkiTools**. Any of the DonkiTools aims at becoming a standard in its field of application at Elettra and FERMI.

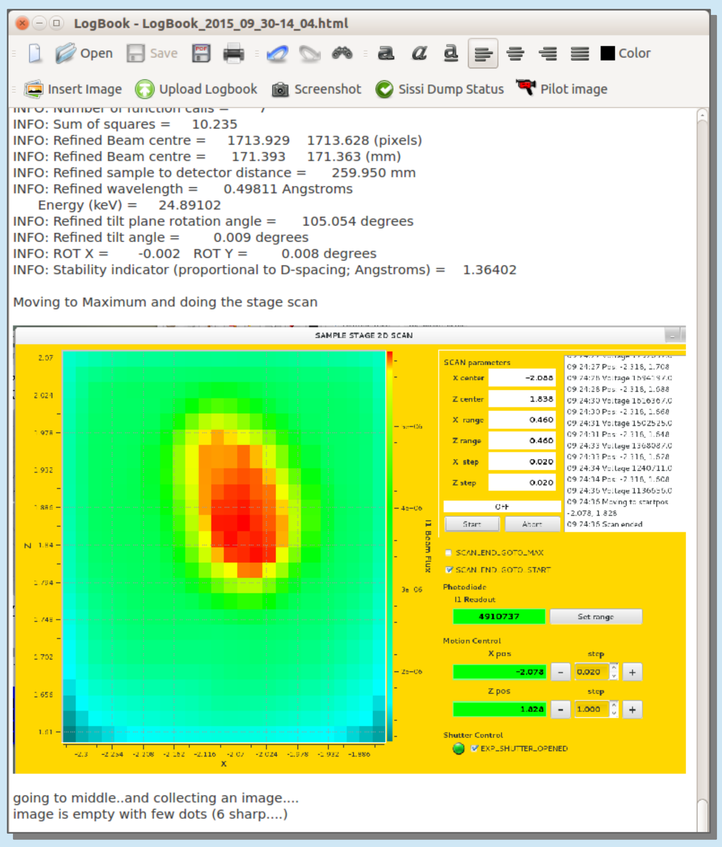
DonkiTools applications are flexible, user friendly and portable over different platforms. The strength of this suite resides in its design choices: a modern and powerful language like Python at the core, a highly portable graphics library like Qt for the GUI and a plug-in based architecture that permits a high degree of customization.



2. DonkiLOG

An extensible electronic logbook for experiments with the embedded data server that allows the acquisition system to log directly into the user logbook.

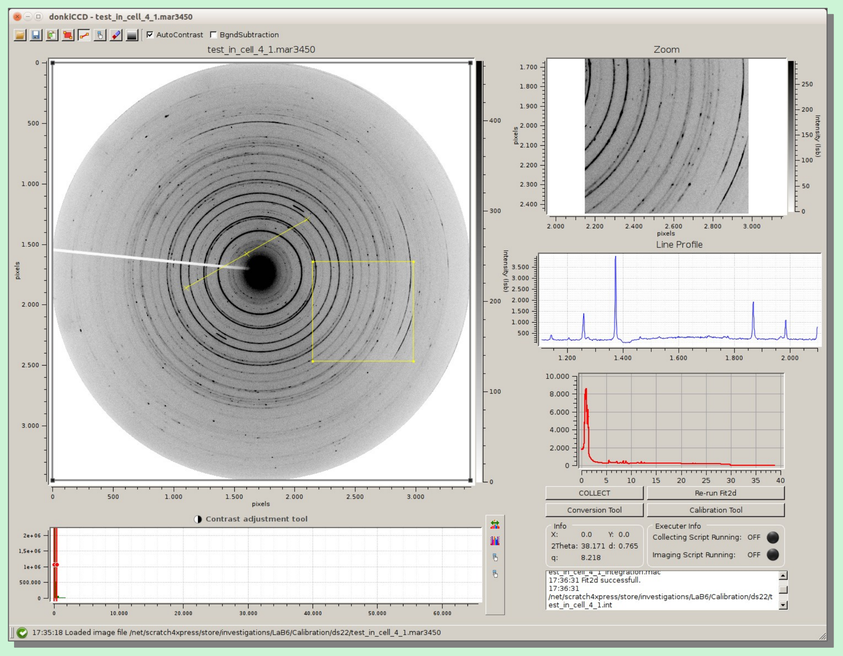
- WYSIWYG HTML based text editor
- plug-in based extensibility
- integrated Data server for remote uploading of images and text
- screen-shot insertion
- PDF exporting



3. DonkiCCD

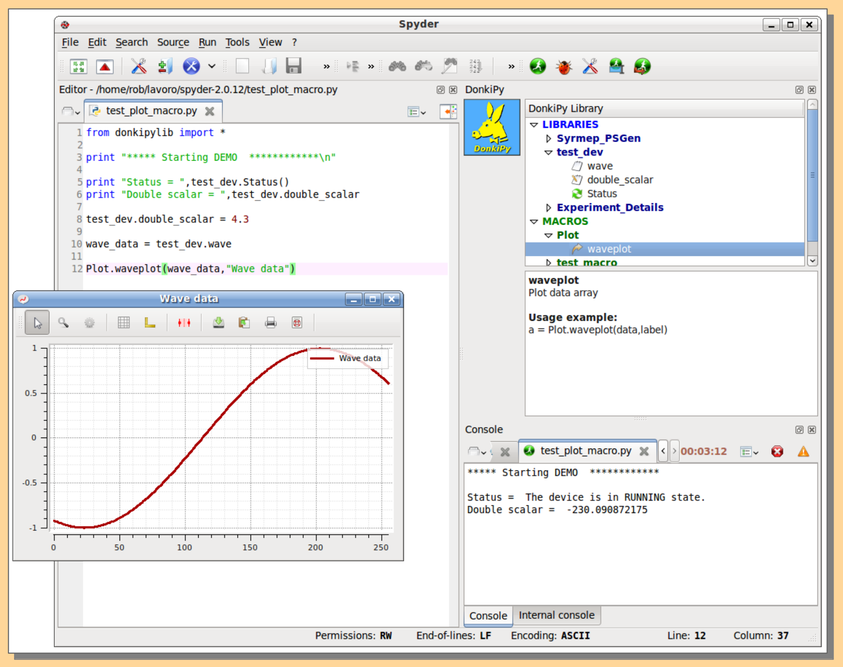
A flexible visualizer of scientific images that may be customized and integrated to the end-station control system.

- support for common scientific image formats: CBF, TIFF, MAR345,...
- region of interest (ROI) zooming
- line profile tool
- background subtraction
- plug-in based extensibility



4. DonkiPY

A tool for rapid prototyping of data collection and analysis scripts. **DonkiPY** is an extension module of Spyder that allows the usage of custom libraries, also called macros, developed by specialized staff. Furthermore, the IDE is enriched with an interactive help system that visualizes documentation and examples relative to the supplementary libraries. It has been developed in order to let scientists apply their ideas without a detailed knowledge of the control system or the mathematical methods involved.



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