Contribution ID: **84** Type: **not specified**

Automation of Liquid Flat-Jet Characterization for X-ray Free-Electron Laser Experiments

This project aims to develop an automated system for real-time characterization of water flat-jets using MATLAB or LabVIEW. The goal is to create a user-friendly graphical user interface (GUI) that allows for one-click characterization, enabling efficient and accurate measurements of flat-jet dimensions (250 x 500 μm2 area and sub-μm thickness) from laser interference fringe patterns during experimental campaigns. The project will integrate the GUI with the experimental setup for real-time analysis, tested under vacuum conditions, to optimize the system for accuracy and reliability. The outcome of the project will include a fully functional GUI for automated vacuum running flat-jet characterization during beamtime at the X-ray Free-Electron Laser. Currently, we have the capability to measure the flat-jet thickness using phase shift data from an interferometer using MATLAB programing software. The existing diagnostics software package is needed to be further developed.

Group

FS-PS-FCP

Project Category

A4. Development of experimental techniques

Special Qualifications

Matlab

DESY Site

Hamburg

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