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Advancing FAIR principles for MHz-XPCS experiments at EuXFEL within the framework of the DAPHNE4NFDI project

X-ray Photon Correlation Spectroscopy (XPCS) is an experimental technique used to study protein and molecular dynamics on length scales ranging from angstroms to micrometers. The unique properties of the pulses from the European X-ray Free Electron Laser (EuXFEL), such as exceptional transverse coherence and megahertz (MHz) repetition rate, have made it possible to investigate the collective diffusive dynamics of such systems with (sub-) microsecond temporal resolution. Although XPCS has become a routine technique at storage-ring sources, its implementation at EuXFEL is still in progress.

We aim at developing the MHz-XPCS at EuXFEL as a routine technique guided by the FAIR principles, the implementation of which is actively progressing within the DAPHNE4NFDI project. In our poster, we discuss possible strategies to achieve this goal, covering stages from initial near-online data processing to the uploading of the refined “Top Level” data on the dedicated DAPHNE4NFDI web platform.

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