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Ultrafast dynamics of complex systems at the Alvra Endstation

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The advent of X-ray Free Electron Lasers (XFELs) introduced the possibility to study ultrafast phenomena in the X-ray range, with high temporal resolution and unprecedented peak brightness. This has led to the extension of many established methods into the time-domain as well as the development of new photon-hungry techniques XFELs. These advances have also made it possible to take full advantage of the element and site-specificity of X-ray spectroscopy techniques, such as X-ray Absorption (XAS) and X-ray emission (XES), as well as scattering and diffraction techniques, such as X-ray Solution Scattering (XSS) and Serial Femtosecond Crystallography (SFX), in the study of ultrafast processes in complex molecular systems. In this talk, I will show how this was used to unveil the complete photoinduced dynamics of dilute, biologically relevant heme proteins in physiological conditions, such as Cytochrome C and Myoglobin, as well as present future perspectives in the field of ultrafast X-ray spectroscopy at Free Electron Lasers, and more specifically at the Alvra endstation at SwissFEL.

Would you like to participate in the Poster Prize competition?

Presenter: BACELLAR, Camila (SwissFel)

Session Classification: XFEL I