European XFEL Users' Meeting — Satellite meeting

Data analysis at the European XFEL

Tuesday, 25 January 2022
Virtual Meeting (Zoom)

The experiments performed at the European XFEL generate enormous amounts of data. While online analysis, which happens in near real-time, provides crucial feedback to steer the experiment, more rigorous offline analysis is necessary for new scientific findings.
One of the missions of the Data Analysis group is to provide tools to enable analysis and interpretation of data, both online and offline.
The aim of this workshop is to introduce the various tools that we develop and to provide examples of their use, as well as to bring in the point of view of the Users and their feedback. We will also talk about how artificial intelligence and machine learning can be used for data analysis, and discuss new ideas together.

Organiser: Luca Gelisio   Contact: luca.gelisio@xfel.eu

Tuesday 25 January 2022			
09:45 – 10:00	**Welcome**	Luca Gelisio	European XFEL
10:00 – 10:30	**Preamble**	Robert Rosca	European XFEL
10:30 – 11:15	**Online analysis**	James Wrigley, Philipp Schmidt	European XFEL
11:15 – 12:00	**Offline analysis**	Thomas Kluyver, David Hammer	European XFEL
12:00 – 13:00	Break		
13:00 – 13:30	**GroEL diffraction at SQS: Finding the protein needle in a haystack of background**	Tomas Ekeberg	Uppsala University
13:30 – 14:00	**Data processing and reduction in serial crystallography**	Oleksandr Yefanov, Marina Galchenkova	Center for Free Electron Laser Science
14:00 – 14:30	**Towards a streaming algorithm for AGIPD calibration and photon counting**	Felix Brausse	European XFEL
14:30 – 15:00	**Steps towards a real-time pipeline for MHz X-ray imaging**	Pablo Villanueva Perez	Lund University
15:00 – 15:15	Break		
15:15 – 15:45	**A deep dive into the mathematics of Machine Learning**	Danilo Enoque Ferreira de Lima	European XFEL
15:45 – 16:05	**Artificial intelligence activities**	Arman Davtyan, Yue Sun	European XFEL
16:05 – 16:25	**Automated SFX analysis**	Oleksii Turkot, Fabio Dall'Antonia	European XFEL
16:25 – 16:45	**Data reduction at EuXFEL: first steps**	Egor Sobolev	European XFEL
16:45 – 17:00	Break		
17:00 – 18:30	**Round table**	Steve Aplin	European XFEL

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