

# XRO satellite meeting:

## *Enhancing UX in X-ray Optics: Simulations including AI-driven Applications*



**Thu. 29 and Fri. 30 January 2026**

European XFEL, XHQ building, seminar room E1.173

*In-person Meeting*

The aim of the workshop is to present and discuss the latest developments in X-ray optics simulations, offering practical support to the XFEL and SRS communities in designing and specifying advanced devices for intense, coherent FEL radiation, as well as in upgrading modern SRS facilities. The program will also feature a roundtable discussion on future plans for the **SIM-XX** (SIMulations in X-ray optics eXchange) platform, which serves as a communication and collaboration hub for experts and advanced users worldwide. The platform enables information exchange, coordination of research efforts, and continued progress in the field of X-ray optics simulations.

*Organiser: Liubov Samoylova, Maurizio Vannoni, Harald Sinn*

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### Thursday, 29 January 2026

<b>09:00</b>	<b>Welcome</b>	<b>H. Sinn / M. Vannoni</b>	<b>EuXFEL</b>
09:10	Introduction	L. Samoylova	EuXFEL
<b>Session I</b>		<b>Chair: H. Sinn</b>	
09:20	Electrodynamics Simulations for Development and Efficient Use of Modern Synchrotron Light	O. Chubar	BNL
09:55	Wavefield Prediction at the European XFEL	T. Guest	EuXFEL
<b>10:30</b>	<b>Coffee Break</b>		
10:50	From Design to Lasing: Modelling and Demonstration of a Cavity Based XFEL	P. Rauer	DESY/MXL
11:25	An introduction to software package XRT, its standard and recent capabilities	K. Klementiev	MAX IV
<b>12:00</b>	<b>Lunch break (self-paid lunch)</b>		
<b>13:20</b>	<b>SIM-XX Round Table</b>	<b>Chair: L. Samoylova</b>	
<b>15:20</b>	<b>Coffee Break</b>		
<b>Session II</b>		<b>Chair: M. Vannoni</b>	
15:50	Soleil's tender X-ray monochromators : concepts, toolbox and results	D. Dennetiere	Synchrotron SOLEIL
16:10	Wavefront simulation for beamline development at FLASH	B. Keitel	DESY / FLASH
16:30	X-ray Server: 28 years online. Latest AI-assisted developments	S. Stepanov	ANL
16:50	Integrating Multiphysics Simulation with AI-Enhanced Surrogate Modelling	F. Yang	EuXFEL
17:10	Statistical optical methods for electron beam size diagnostics at European XFEL	A. Trebushinin	EuXFEL

*Friday 30.01. program on next page*

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<b>Session III</b>		<b>Chair: E. Plönjes</b>	
09:00	Rocking-Curve Imaging for X-Ray Optics at EuXFEL: Crystal Measurements and Data Analysis	K. Tasca	EuXFEL
09:20	Alignment of crystalline optics using diffraction losses	O. Yefanov	DESY / CFEL
09:40	The current status and applications of the SIMEX platform	Jiucheng E	EuXFEL
10:00	Simulation of ultrafast dynamical diffraction wavefronts from laser distorted semiconductors	A. Rodriguez Fernandez	Diamond SRS
<b>10:20</b>	<b>Coffee Break</b>		
10:50	Status of FAST-XPD: Photon Database for the European XFEL	M. Yurkov	DESY
11:10	Data science enhanced spectral and temporal characterization	D. Danilo Ferreira de Lima	EuXFEL
11:30	Conclusions		
<b>12:00</b>	<b>Lunch break (self-paid lunch)</b>		