

**Satellite Workshop on Photon Diagnostics (XPD)**

Monday, 26 January 2026, at 12:30

*European XFEL, Lighthouse Auditorium - In-person Meeting*

Photon diagnostics at X-ray Free-Electron Lasers is an essential ingredient for optimized machine performance and successful user experiments.

The task of photon-diagnostics is to provide real-time information on critical beam properties, including beam position, transverse spatial profile, pulse energy, spectral distribution, polarization, wavefront, pulse arrival time, temporal profile and coherence. Operators rely on this data for machine tuning and performance monitoring. Instruments and users depend on these measurements for data analysis and sorting.

A diverse array of advanced instrumentation and techniques must be applied to achieve these objectives. Our methods include non-invasive, gas-based photo-emission devices, partially and fully invasive crystal-based techniques, and the use of Machine Learning algorithms. The instrumentation contains ultrahigh-vacuum components, fast electronics, and specialized sensors and detectors.

This workshop provides a dedicated platform to share the latest progress and innovations in photon diagnostics for X-ray beam characterization, and to identify opportunities for new collaborations.

It will enable discussions on emerging novel methods and applications while providing an opportunity for operators and users to present their immediate needs and long-term requirements.

Organisers: Jan Grünert, [jan.gruenert@xfel.eu](mailto:jan.gruenert@xfel.eu)  
Joakim Laksman, [joakim.laksman@xfel.eu](mailto:joakim.laksman@xfel.eu)

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<b>12:30</b>	<b>Registration and welcome coffee</b>		
13:00	Workshop Introduction. News about XFEL photon diagnostics	J. Grünert	EuXFEL
13:25	Coaxial VMI for temporal diagnostics	Z. Guo	PSI
13:50	Versatility of Magnetic Bottle Electron Spectrometers	R. Feifel	University of Gothenburg, SE
14:15	Capturing nonlinear electron dynamics with gas photoemission spectroscopy	W. Helml	TU Dortmund
<b>14:40</b>	<b>Coffee break</b>		
15:00	Overview strategic projects by XPD. Involvement of XPD in other strategic programs.	J. Grünert	EuXFEL
15:15	Automation strategy program, and its relevance to diagnostics	S. Hauf	EuXFEL
15:40	Attosecond strategy program diagnostic projects	J. Liu J. Laksman	EuXFEL
16:15	Strategy project on energy range extension to 30 keV	T. Maltezopoulos	EuXFEL
<b>16:40</b>	<b>Coffee break</b>		
17:00	Calibration of intense XFEL pulses using XATOM	Sang-Kil Son	CFEL
17:25	Detectors for Diagnostics: Current line-up and developments at Hamamatsu Photonics	F. Briechele	Hamamatsu Photonics, DE
17:50	Multilayer based polarimetry	H. Wang	Diamond Light Source
18:15	Damage of invasive photon diagnostic systems	L. Juha	FZU
<b>18:40</b>	<b>Conclusion</b>		