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**UNIVERSITÄT
BERN**

Seminar über Biomedizinische Photonik

Referent/in: Dr. Gianluca Iori, Translational X-ray Scientist, Paul Scherrer Institute PSI

Titel: Phase-contrast imaging with hard X-rays: from the beamline to the operating room

In this presentation, I will share my experience in full-field X-ray phase-contrast imaging (XPCI) of biological but also engineering and cultural heritage materials, developed as the responsible of the ID-10 BEATS beamline of SESAME (Synchrotron-light for Experimental Science and Applications in the Middle East) in Jordan. The beamline BEATS was designed and built in a collaboration between research institutes in the Middle East and European synchrotron facilities and is open to users since January 2024. The results that I will present were obtained during the first year of beamline operation and demonstrate the potential of the instrument for sub-micron-resolution phase-contrast soft-tissue imaging, high-energy white-beam scanning of large cultural heritage artifacts, K-edge-subtraction imaging, time-resolved in-situ experiments and more. In the second part of the presentation, I will discuss the state-of-the-art, opportunities and challenges of the application of XPCI using laboratory X-ray sources of limited coherence. I will outline ongoing and planned research at Paul Scherrer Institute PSI and ETH Zurich on the clinical translation of XPCI, with a focus on clinical applications for virtual histology and tumor margin assessment in breast cancer specimens.

Zeit: Wednesday 29.10.2025, 10:15 Uhr

Ort: Room A97, ExWi, Sidlerstrasse 5, 3012 Bern