SOLEIL SYNCHROTRON

Réunions scientifiques

Séminaires

TOMCAT : a new beamline for Tomographic Microscopy and Coherent Radiology experiments

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Invité par Mourad IDIR

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Synchrotron-based X-ray Tomographic Microscopy (XTM) is nowadays a powerful technique for non-destructive, high-resolution investigations of different sorts of materials. The demand for high image quality, in terms of contrast and spatial or time resolution, together with high flexibility, like broad energy range, selectable bandwidth, tunable beam size and user's friendliness are setting severe requirements on beamline components, end-station instrumentation and controls. In addition, special sample environments like micro-compression and tensile devices, cryo and corrosion chambers, are usually integrated into the final experimental setup in order to condition the specimen in situ during data acquisition. At the Swiss Light Source, large efforts have been invested in the development of phase sensitive techniques which provide unprecedented contrast enhancement: a fast, full 3D approach for small samples and an interferometric method for large field of view have been deeply improved and are now routinely used for phase contrast imaging. A beamline for Tomographic Microscopy and Coherent Radiology experiments (TOMCAT) has been built and is currently under commissioning. Located at the X02DA port of the SLS, the beamline gets photons from a 2.9 T superbend. A double crystal multilayer monochromator (DCMM) covers an energy range between 6 and 45 keV with a bandwidth of a few percent down to 10-4. The beamline can also be operated in white-beam mode, providing the ideal conditions for real-time coherent radiology of small animals. The talk will describe the technical aspects of some beamline components and instruments and presents some scientific applications of today and tomorrow.

Formalités d'entrée : accès libre dans l'amphi du Pavillon d'Accueil,si la manifestation a lieu dans le Grand Amphi Soleill du Batiment Central, merci de vous munir d'une pièce d'identité et de prévenir le secrétariat en charge de l'événement.

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