Réunions scientifiques

Séminaires

Séminaire SOLEIL

State of the art of synchrotron-based microtomography

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Invité par Jean Pierre SAMAMA

Lundi 29 mars à 17h00
Grand Amphi SOLEIL

Synchrotron microtomography is an X-ray imaging method that has a wide range of applications in such diverse fields as materials science (including biomaterials), geology, biology, paleontology and many more.

The most important assets of synchrotron radiation for imaging applications are its high intensity, the possibility to use monochromatic radiation, and the high degree of spatial coherence. While the high intensity means that high spatial and/or time resolution can be obtained, the coherent properties of synchrotron X rays give access to phase-contrast techniques, which can visualize structures that show insufficient contrast on conventional X-ray imaging systems based on laboratory or hospital X-ray tubes.

The latest developments in synchrotron microimaging extend the accessible range of sample parameters in terms of time, spatial resolution and sensitivity. Thus, with highly specialized instrumentation, microsecond-scale phenomena can be followed; spatial resolution down to 100 nm and less has been demonstrated with hard X rays. New ultrasensitive techniques such as X-ray Talbot interferometry can discriminate soft tissue details without staining agents.

The presentation will give an overview over some of these developments, with a focus on X-ray Talbot interferometry, and their possible applications, particularly in the field of high-resolution imaging of biological samples.

Formalités d'entrée *: accès libre dans l'amphi du Pavillon d'Accueil. Si la manifestation a lieu dans le Grand Amphi Soleil du Bâtiment Central, merci de vous munir d'une pièce d'identité (à échanger à l'accueil contre un badge d'accès).*

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