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4D microtomographic imaging with sub-second temporal resolution with hard X-rays.

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A new fast tomographic data acquisition scheme [1] is being developed at the TOMCAT beamline. We acquire the full set of (600-1000) tomographic projections in typically 0.5 seconds with the voxel sizes ranging from 0.5 to 11 μm and a corresponding field of view from 0.7 to 22 mm. The acquisition of 4D series with high temporal and spatial resolution opens up the possibilities to observe dynamic phenomena at the microscale. A wide range of in-situ and in-vivo experiments will benefit from such unique capabilities. We will report the challenges and successes of 4D imaging.

References

[1] R. Mokso, F. Marone, D. Habberthuer, J. Schittny, G. Mikuljan, A. Isenegger, M. Stampanoni, AIP Conf. Proc. , XRM2010 (2011)

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Primary author: Dr MOKSO, Rajmund (Paul Scherrer Institut)

Co-authors: Dr MARONE, Federica (Paul Scherrer Institut); Mr LOVRIC, Goran (Paul Scherrer Institut); Mr MIKULJAN, Gordan (Paul Scherrer Institut); Prof. STAMPANONI, Marco (Paul Scherrer Institut); Dr IRVINE, Sarah (Paul Scherrer Institut)

Presenter: Dr MOKSO, Rajmund (Paul Scherrer Institut)

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