

# **Hard X- -ray synchrotron imaging and neutron techniques (absorption, phase, diffraction) and applications**

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The features associated with modern Synchrotron Radiation machines (intense and coherent beams) result in a substantial extension of X-ray imaging capabilities in terms of spatial and temporal resolution, phase contrast, 3D images and combination of techniques.

We describe some of the two and three-dimensional synchrotron radiation based imaging techniques, with emphasis on absorption, phase contrast and Bragg diffraction based imaging. Selected examples illustrate the capabilities of these constantly evolving methods.

The principles of neutron imaging is also described and illustrated emphasizing the complementarity between the two types of signals.