



list

Laboratoire d'intégration des systèmes et des technologies
Département Imagerie Simulation et Contrôles

MASTER

Hyper resolution in X-ray imaging

Description

The term hyper-resolution refers to the method of combining a set of any given resolution images into a higher resolution image using image processing methods. This work concerns the reconstruction of high-resolution X-ray images. Specifically, we will address the problem of acquiring X-ray images from multiple, very close and known view points.

Different methods will be evaluated, in the framework of Non Destructive Testing to enhance detection limit of defects in samples and to increase the spatial resolution in computed tomography. Simulated data will be obtained by our modeling software CIVA-XRay (<http://www.extende.com>). Experiments will be carried out on our advanced CT set-up (see <http://www.skyscan.be/products/2011.htm>). Methods will be evaluated regarding their processing time, robustness to noise and reliability.

Key words: tomography, imaging, physics

Computer language: C++ or Matlab

Main skills: computer science, numerical methods, modeling, optimization

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