

Imaging

Activities have been concentrated on three main topics relating to new concepts of imaging systems and generalization of Radon transform (RT) :

- Development of the so-called V-line Radon transform which has inspired related works of others groups internationally (Ambartsoumian, Schotland, Ilmavirta, etc). Our V-line RT is very useful not only for scanning large objects (in non-destructive industrial evaluation-NDE), for imaging flat natural and cultural heritage objects, but also for a new combined transmission-reflection imaging process using primary radiation [hal-01759845], [hal-01472477], [hal-01477262], [hal-01260333], [hal-01260337], [hal-01760391].
- Development of a new modality for Compton scattering tomography which is suitable for imaging small objects (human organs, etc). The modelling of this system leads to a new Radon transform named "Circular Arc RT" whose forward and inverse formulas were established and its applications in biomedical imaging was shown [hal-01260543], [hal-00798923], [hal-00860054], [hal-01760415], [hal-00860068].
- Development of a new algorithm for a spherical Radon transform which allows a 3D image reconstruction for Radar imaging of 3D landscape using a monostatic antenna carried by a plane [hal-01260336].

