

**MEETING ON TOMOGRAPHY AND
APPLICATIONS
MATHEMATICS DEPARTMENT, POLITECNICO DI MILANO
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Decomposition of projections and materials in CT imaging

ABSTRACT In the classical sense of tomographic imaging, we can gather X-ray projections of an object from different directions. Different types of materials have different absorption properties, which enables us to reconstruct the different materials in the image. Still these classical types of projections have a drawback, that they respond to all the materials at once. What if we could use new projection acquisition techniques – like prompt gamma neutron activation tomography – to get decomposed projections. Such projections would have values which do not only tell the summed attenuation of the materials, but the proportion of the materials along the beam lines. Such projections could bring an interesting new aspect to the reconstruction process. The presentation will give simulation studies for such scenarios.

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