Einladung zum Oberseminar Wissenschaftliches Rechnen

Julius-Maximilians-Universität Würzburg
Lehrstuhl für Wissenschaftliches Rechnen IX

Dr. Gaël Rigaud

University of Würzburg, Chair of Scientific Computing

Image reconstruction in Compton scattering imaging

Compton scattering imaging (CSI) is an arising imaging concept measuring and exploiting the scattering radiation as an object of interest is illuminated by an ionising source (preferably gamma rays). Known as the Compton effect, the phenomena describes the collision/scattering of a photon with an electron leading to a loss of energy of the photon and a change of trajectory. The photon is measured by a camera in terms of energy delivering a precious information on the electron density. The measurement consists then in detecting the scattered photons for different detector positions and different level of energies. The complexity of the involved physical phenomena induces models for the measurement hard to handle when recovering the electron density. Assuming a predominance of the first-order scattering, the scattered radiation can be approximated by some generalized Radon transforms. This talk reviews our results when dealing with generalized Radon transforms which model various modalities on CSI in 2D and 3D with the aim of reconstructing information about the electron density of the object under study.

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Zu diesem Vortrag laden wir Sie herzlich ein.

gez. Prof. Dr. Alfio Borzì
gez. Prof. Dr. Bernadette Hahn