Docket #: S07-091

METHODS FOR ANALYTIC RECONSTRUCTION FOR MULT-SOURCE INVERSE GEOMETRY CT

Disclosed are embodiments of methods for reconstructing x-ray projection data (e.g., one or more sinograms) acquired using a multi-source, inverse-geometry computed tomography ("IGCT") scanner. One embodiment of a first method processes an IGCT sinogram by rebinning first in "z" and then in "xy," with feathering applied during the "xy" rebinning. This produces an equivalent of a multi-axial 3.sup.rd generation sinogram, which may be further processed using a parallel derivative and/or Hilbert transform. A TOM-window (with feathering) technique and a combines backprojection technique may also be applied to produce a reconstructed volume. An embodiment of a second method processes an IGCT sinogram using a parallel derivative and/or redundancy weighting. The second method may also use signum weighting, TOM-windowing (with feathering), backprojection, and a Hilbert Inversion to produce another reconstructed volume.

Patents

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