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Local ROI Reconstruction via Generalized FBP and BPF Algorithms along More Flexible Curves

Hengyong Yu,[1] Yangbo Ye,[1,2] Shiying Zhao,[1] and Ge Wang[1,2]

[1]CT/Micro-CT Laboratory, Department of Radiology, University of Iowa, Iowa City, IA 52242, USA
[2]Department of Mathematics, University of Iowa, Iowa City, IA 52242, USA

Abstract

We study the local region-of-interest (ROI) reconstruction problem, also referred to as the local CT problem. Our scheme includes two steps: (a) the local truncated normal-dose projections are extended to global dataset by combining a few global low-dose projections; (b) the ROI are reconstructed by either the generalized filtered backprojection (FBP) or backprojection-filtration (BPF) algorithms. The simulation results show that both the FBP and BPF algorithms can reconstruct satisfactory results with image quality in the ROI comparable to that of the corresponding global CT reconstruction.

Abstract

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