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Title	Metal Artifact Reduction based on 2D-Projection Correction for Dental Cone-beam CT Images
Author	Walita Narkbuakaew (National Science and Technology Development Agency, Thailand)
Email	walita.nar@nstda.or.th

Abstract

Metal artifacts causing dark and bright streaks normally appears in CT or CBCT data when a metallic object is embedded inside a field of view (FOV). These artifacts degrade image quality and distort anatomical structures. To solve this problem, we present a new metal artifact reduction (MAR) method. The proposed method was based on correction of 2D raw projection data and implemented as a plug-in of the reconstruction software. To accelerate computation, the proposed method used C++ and CUDA language to operate on the graphic processing units (GPUs). We applied the proposed method to several dental CBCT data and executed the proposed method with full and short-scan CBCT reconstruction algorithms. The results showed that the proposed method obviously reduced the metal artifact, performed quickly, and well collaborated with both reconstruction algorithms.