



US010939845B2

(12) **United States Patent**
Tian et al.

(10) **Patent No.:** **US 10,939,845 B2**
(45) **Date of Patent:** **Mar. 9, 2021**

(54) **FFL-BASED MAGNETIC PARTICLE IMAGING THREE-DIMENSIONAL RECONSTRUCTION METHOD, SYSTEM, AND DEVICE**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **16/907,334**

(22) Filed: **Jun. 22, 2020**

(65) **Prior Publication Data**
US 2021/0015395 A1 Jan. 21, 2021

(30) **Foreign Application Priority Data**
Jul. 15, 2019 (CN) 201910637247.7

(51) **Int. Cl.**
A61B 5/0515 (2021.01)
A61B 5/00 (2006.01)

(52) **U.S. Cl.**
CPC **A61B 5/0515** (2013.01); **A61B 5/7225** (2013.01)

(58) **Field of Classification Search**
CPC A61B 5/0515; A61B 5/7225
See application file for complete search history.

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(57) **ABSTRACT**

A FFL-based magnetic particle imaging three-dimensional reconstruction method includes: acquiring current signal data of an induction coil during FFL-based three-dimensional scanning process of a scanned object; based on the current signal data, performing deconvolution through a preset kernel function to acquire a two-dimensional image data set, wherein the kernel function is a step function with L2 regularized constraint; based on the two-dimensional image data set, acquiring an initial three-dimensional image by using a Wiener filtering deconvolution algorithm; and based on the initial three-dimensional image, performing deconvolution through a Langevin function, and acquiring a final three-dimensional image by Radon transformation. A FFL-based magnetic particle imaging three-dimensional reconstruction system includes a magnet group, an induction coil, an imaging bed, and a control and imaging device, wherein, a magnetic particle imaging method in the control and imaging device is the FFL-based magnetic particle imaging three-dimensional reconstruction method.

12 Claims, 2 Drawing Sheets

