

Request Information

Technology Development Group

Available Technologies

Contact Our Team

Permalink

Cardiac MRI Circular Tagging

Tech ID: 23112 / UC Case 2011-457-0

CONTACT

UCLA Technology Development Group ncd@tdg.ucla.edu tel: 310.794.0558.



INVENTORS

Moghaddam, Abbas Nasiraei

OTHER INFORMATION

KEYWORDS

CMR, cardiovascular magnetic

resonance imaging, cardiac MRI

tagging

CATEGORIZED AS

Imaging

Medical

RELATED CASES 2011-457-0

SUMMARY

UCLA researchers in the Department of Radiology have developed a cardiac Magnetic Resonance Imaging (MRI) tagging system that is more adaptive to the natural geometry and biomechanics of the heart for effectively measuring parameters such as cardiac wall thickening and radial strain.

BACKGROUND

Cardiac MRI tagging is a promising technique for noninvasively studying regional heart wall motion. To implement, tags are first formed in the myocardium using spatially dependent excitation methods and then a sequence of images are acquired at various phases of the cardiac cycle. Currently, tagging is implemented in the Cartesian coordinate system in which the gradient fields create only parallel taglines.

Although Cartesian tagging is most widely implemented, myocardium strain is conventionally presented in the polar coordinate system because it adapts best to the morphology and mechanics of the heart. Further, if tagging patterns were in either the radial or circumferential directions, as opposed to the Cartesian direction, strain calculations would be simplified.

INNOVATION

Researchers at UCLA have developed a novel and robust circular tagging method for cardiac MRI with high spatial resolution and tagline density that allows for effectively measuring and calculating cardiac wall thickness, myocardial shear rate and angular strains.

APPLICATIONS

- Included as part of the cardiac package of MRI systems
- > Assessment of myocardium function by observing wall thickening and/or wall motion

ADVANTAGES

- Compatible with the heart's morphology and movement
- Does not distort taglines
- Measurements are in the form necessary for today's clinical practice
- Adaptive to simpler mathematical algorithms for automatic calculations

STATE OF DEVELOPMENT

Researchers have developed and tested the method on phantom as well as healthy volunteers and have received IRB approval for testing on patients.

PATENT STATUS

Country	Туре	Number	Dated	Case
United States Of America	Issued Patent	9,933,502	04/03/2018	2011-457

RELATED MATERIALS

CMR Tagging in the Polar Coordinate System.

Gateway to Innovation, Research and Entrepreneurship

UCLA Technology Development Group

10889 Wilshire Blvd., Suite 920,Los Angeles,CA 90095 https://tdg.ucla.edu Tel: 310.794.0558 | Fax: 310.794.0638 | ncd@tdg.ucla.edu © 2013 - 2018, The Regents of the University of California Terms of use Privacy Notice

