Request Information Permalink

INTRINSIC NAVIGATION FROM VELOCITY-ENCODING GRADIENTS IN PHASE-CONTRAST MRI

Tech ID: 24756 / UC Case 2015-097-0

PATENT STATUS

Country	Туре	Number	Dated	Case
United States Of America	Issued Patent	10,132,902	10/20/2018	2015-097

BRIEF DESCRIPTION

Time-resolved phase contrast MRI (4D flow) can quantify cardiac function and flow. The technique may even permit complex anatomical assessment, thus comprising a comprehensive exam in a single scan. Unfortunately, artifacts from respiratory motion compromise this ability. Therefore, we developed a simple method to measure motion using readily available navigation information from the velocity-encoding gradients without any significant modification to conventional sequences.

SUGGESTED USES

- » Can be used in conjunction with any type of phase-contrast MR imaging scheme and any type of reconstruction strategy.
- » Allows for high-quality images to be reconstructed from exams with long acquisition times and other types of exams that are sensitive to motion defects.
- >> Can be used for any part of the body that requires assessment using phase-contrast imaging. It is especially useful in cases when patients have difficulty holding still for long time periods.
- >> For longer scans (>1 min), breath-holds are no longer possible and respiratory motion must be considered. With the navigation technique, this imaging modality can be made accessible to a wider patient population.

ADVANTAGES

- » In conventional phase-contrast sequences, no alterations to the sequence timing or gradient waveform are needed.
- » Navigator information is available for every repetition time and is naturally synchronized to the acquired imaging data.
- » For multi-direction phase-contrast imaging different navigators are available to describe multi-dimensional linear motion.
- » In conjunction with a with a high-density multi-channel coil receiver, each coil element provides spatial localization to the navigator signals.
- ightharpoonup The navigator measured can be used for motion compensation purposes or to prospectively gate the acquisition.
- >> The method can be used for any sampling strategy (both Cartesian and non-Cartesian).

RELATED MATERIALS

» Intrinsic Navigation from Velocity-Encoding Gradients in Phase-Contrast MRI - 12/07/2015

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

▶ Method for Motion Sensing in MRI Using Preamplifier RF Intermodulation

CONTACT

Terri Sale terri.sale@berkeley.edu tel: 510-643-4219.



INVENTORS

» Lustig, Shimon M.

OTHER INFORMATION

KEYWORDS

healthcare, imaging, MRI

CATEGORIZED AS

» Imaging

» Medical

» Medical

>> Imaging

RELATED CASES

2015-097-0



University of California, Berkeley Office of Technology Licensing

2150 Shattuck Avenue, Suite 510, Berkeley,CA 94704

Tel: 510.643.7201 | Fax: 510.642.4566

https://ipira.berkeley.edu/ | otl-feedback@lists.berkeley.edu

© 2015 - 2018, The Regents of the University of California

Terms of use | Privacy Notice