

Method for eddy-current artifact reduction in balanced steady-state free precession Magnetic Resonance Imaging (MRI)

USC Case #09-079

Market Opportunity:

Steady-state free precession magnetic resonance imaging (SSFP MRI) is widely used for clinical applications, but is susceptible to artifacts from eddy currents, particularly those from magnetic field gradients used for imaging and flow encoding.

USC Solution:

USC researchers have developed a method for mitigating such eddy-current artifacts, when two or more gradient waveforms are interleaved in the pulse sequence. This method reduces the level of artifact without increasing total scan time, and provides a parameter that can be optimized on an application-specific basis.

Value Proposition

- Produces clearer images compared to previous methods
- Faster scanning
- Reduces level of artifacts
- Can be optimized on an application-specific basis

Keywords:

Magnetic resonance imaging, balanced steady state free precession, eddy currents, artifacts, interleaved balanced SSFP



Applications

- Magnetic Resonance Imaging
- Cardiac, body/vascular imaging, brain and abdominal imaging

Stage of Development

- Implemented and experimentally tested
- Available for exclusive and non-exclusive license

Intellectual Property

Status:

Patent granted: [US 8,283,924](#)

Key Publication:

[Interleaved balanced SSFP imaging: artifact reduction using gradient waveform grouping. J Magn Reson Imaging. 2009](#)

Contact information

Nikolaus Traitler

Licensing Associate
(213) 821-3550
traitler@usc.edu

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