

Dynamic 3D MRI Data Sampling

USC Case #2014-227

Market Opportunity:

Magnetic resonance imaging (MRI) involves tradeoffs between data acquisition speed, spatial resolution, spatial coverage, and signal-to-noise ratio. The need for speed in dynamic 3D MRI has led to the use of under-sampled data acquisitions and constrained reconstruction algorithms that incorporate prior information. Several potential benefits have been demonstrated in the recent literature, including improved spatio-temporal resolution, and spatial coverage to imaging protocols such as dynamic contrast enhanced (DCE) MRI and angiography.

USC Solution:

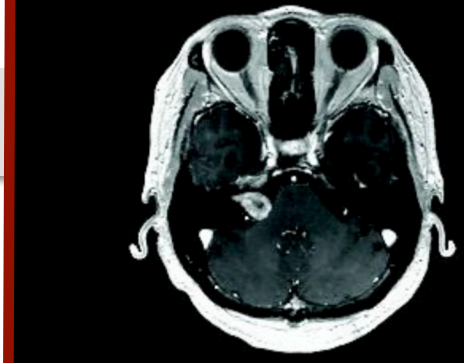
USC researchers have developed a method to increase the clinical usability of these prior techniques through a data sampling scheme that can be generated “on-the-fly” on MRI scanners. The key features are computational efficiency and compatibility with modern MRI constrained reconstruction.

Value Proposition

- Efficient sampling scheme for time-resolved 3D MRI
- Highly accelerated DCE-MRI
- Compatible with modern reconstruction methods and parallel imaging and compressed sensing

Keywords:

Magnetic resonance imaging (MRI), Time-resolved 3D MRI, dynamic contrast enhanced MRI, golden angle, randomized sampling, constrained reconstruction



Applications

- Magnetic resonance imaging (MRI)

Stage of Development

- Tested
- Available for exclusive and non-exclusive license

Intellectual Property

Status:

Patent pending

Key Publication:

[GOCART: GOLDen-angle CARTesian Randomized Time-resolved 3D MRI, *Magnetic Resonance Imaging* \(2015\)](#)

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