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3D Hyperpolarized C-13 EPI with Calibrationless Parallel Imaging

Jeremy W. Gordon, Rie B. Hansen, Peter J. Shin, Yesu Feng, Daniel B. Vigneron, Peder E.Z. Larson

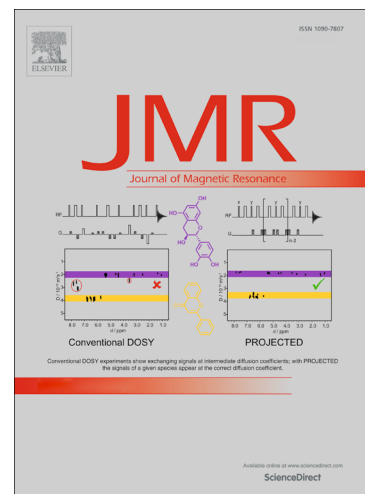
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Title: 3D Hyperpolarized C-13 EPI with Calibrationless Parallel Imaging

Authors: Jeremy W Gordon¹, Rie B Hansen², Peter J Shin¹, Yesu Feng¹, Daniel B Vigneron¹, and Peder EZ Larson¹

Affiliation:

¹Department of Radiology and Biomedical Imaging, University of California San Francisco, San Francisco, California

²Department of Electrical Engineering, Technical University of Denmark, Kgs. Lyngby, Denmark

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Abstract

With the translation of metabolic MRI with hyperpolarized ¹³C agents into the clinic, imaging approaches will require large volumetric FOVs to support clinical applications. Parallel imaging techniques will be crucial to increasing volumetric scan coverage while minimizing RF requirements and temporal resolution. Calibrationless parallel imaging approaches are well-suited for this application because they eliminate the need to acquire coil profile maps or auto-calibration data. In this work, we explored the utility of a calibrationless parallel imaging method (SAKE) and corresponding sampling strategies to accelerate and undersample hyperpolarized ¹³C data using 3D blipped EPI acquisitions and multichannel receive coils, and demonstrated its application in a human study of [1-¹³C]pyruvate metabolism.

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