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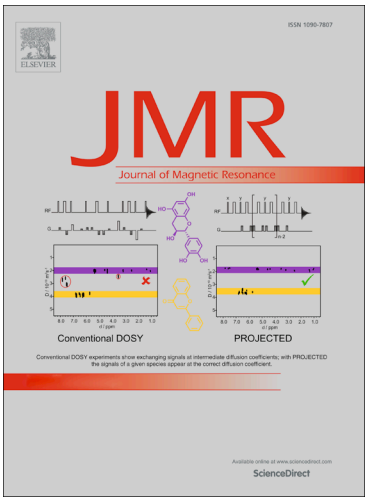

3D Hyperpolarized C-13 EPI with Calibrationless Parallel Imaging

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Abstract

With the translation of metabolic MRI with hyperpolarized ^{13}C 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 ^{13}C data using 3D blipped EPI acquisitions and multichannel receive coils, and demonstrated its application in a human study of [1-^{13}C]pyruvate metabolism.