

The highlighted papers are those papers recognized by the  
reviewers as supporting MRM's goal of Reproducible Research.

## CONTENTS

### ■ SPECTROSCOPIC METHODOLOGY

#### Research Article

- Denoising single MR spectra by deep learning: Miracle or mirage?,** Martyna Dziadosz, Rudy Rizzo, Sreenath P. Kyathanahally, and Roland Kreis.....1749  
*Published online 18 June 2023*

### ■ IMAGING METHODOLOGY

#### Research Articles

- Optimization of acquisition parameters for cortical inhomogeneous magnetization transfer (ihMT) imaging using a rapid gradient echo readout,** Christopher D. Rowley, Jennifer S. W. Campbell, Ilana R. Leppert, Mark C. Nelson, G. Bruce Pike, and Christine L. Tardif .....1762  
*Published online 18 June 2023*

- Investigation of contrast mechanisms for MRI phase signal-based proton beam visualization in water phantoms,** Juliane Schieferrecke, Sebastian Gantz, Aswin Hoffmann, and Jörg Pawelke .....1776  
*Published online 22 June 2023*

- Revealing tumor microstructure with oscillating diffusion encoding MRI in pre-surgical and post-treatment glioma patients,** Ante Zhu, Robert Shih, Raymond Y. Huang, J. Kevin DeMarco, Chitresh Bhushan, H. Douglas Morris, Gail Kohls, Desmond T. B. Yeo, Luca Marinelli, Jhimli Mitra, Maureen Hood, Vincent B. Ho, and Thomas K. F. Foo .....1789  
*Published online 19 June 2023*

- Improving motion robustness of 3D MR fingerprinting with a fat navigator,** Siyuan Hu, Yong Chen, Xiaopeng Zong, Weili Lin, Mark Griswold, and Dan Ma.....1802  
*Published online 22 June 2023*

- Spiral inflow MRA with sliding-slice localized quadratic encoding,** Dinghui Wang, Guruprasad Krishnamoorthy, Melvyn B. Ooi, and James G. Pipe.....1818  
*Published online 06 July 2023*

- Reducing the ambiguity of field inhomogeneity and chemical shift effect for fat-water separation by field factor,** Hao Peng, Chuanli Cheng, Qian Wan, Dong Liang, Xin Liu, Hairong Zheng, and Chao Zou.....1830  
*Published online 28 June 2023*

- Free-breathing high isotropic resolution quantitative susceptibility mapping (QSM) of liver using 3D multi-echo UTE cones acquisition and respiratory motion-resolved image reconstruction,** MungSoo Kang, Gerald G. Behr, Ramin Jafari, Maya Gambarin, Ricardo Otazo, and Youngwook Kee .....1844  
*Published online 01 July 2023*

- $B_1$  inhomogeneity-corrected  $T_1$  mapping and quantitative magnetization transfer imaging via simultaneously estimating Bloch-Siegert shift and magnetization transfer effects,** Albert Jang, Paul K. Han, Chao Ma, Georges El Fakhri, Nian Wang, Alexey Samsonov, and Fang Liu.....1859  
*Published online 10 July 2023*

- Volumetric measurements of weak current-induced magnetic fields in the human brain at high resolution,** Cihan Göksu, Fróði Gregersen, Klaus Scheffler, Hasan H. Eroğlu, Rahel Heule, Hartwig R. Siebner, Lars G. Hanson, and Axel Thielscher .....1874  
*Published online 01 July 2023*

- Brain perfusion imaging by multi-delay arterial spin labeling: Impact of modeling dispersion and interaction with denoising strategies and pathology,** Sara Pires Monteiro, Joana Pinto, Michael A. Chappell, Ana Fouto, Miguel V. Baptista, Pedro Vilela, and Patricia Figueiredo.....1889  
*Published online 29 June 2023*

- Design and development of a novel flexible ultra-short echo time (FUSE) sequence,** Lumeng Cui, Emily J. McWalter, Gerald Moran, and Niranjan Venugopal .....1905  
*Published online 01 July 2023*

## CONTENTS

- Global attention-enabled texture enhancement network for MR image reconstruction,**  
Yingnan Li, Jie Yang, Teng Yu, Jieru Chi,  
and Feng Liu.....1919  
*Published online 29 June 2023*

- Simultaneous multislice EPI prospective motion correction by real-time receiver phase correction and coil sensitivity map interpolation,** Bo Li, Ningzhi Li, Ze Wang,  
Radu Balan, and Thomas Ernst.....1932  
*Published online 13 July 2023*

- Technical Notes**  
**Submillimeter lung MRI at 0.55 T using balanced steady-state free precession with half-radial dual-echo readout (bSTAR),**  
Grzegorz Bauman, Nam G. Lee, Ye Tian,  
Oliver Bieri, and Krishna S. Nayak .....1949  
*Published online 15 June 2023*

- Comparison of model-free Lorentzian and spinlock model-based fittings in quantitative CEST imaging of acute stroke,** Limin Wu,  
Dongshuang Lu, and Phillip Zhe Sun .....1958  
*Published online 19 June 2023*

- 3D diffusion MRI with twin navigator-based GRASE and comparison with 2D EPI for tractography in the human brain,**  
Haotian Li, Tao Zu, Ruike Chen, Ruicheng Ba,  
Yi-Cheng Hsu, Yi Sun, Yi Zhang,  
and Dan Wu.....1969  
*Published online 22 June 2023*

- DeepFittingNet: A deep neural network-based approach for simplifying cardiac  $T_1$  and  $T_2$  estimation with improved robustness,**  
Rui Guo, Dongyue Si, Yingwei Fan, Xiaofeng Qian,  
Haina Zhang, Haiyan Ding,  
and Xiaoying Tang .....1979  
*Published online 06 July 2023*

- BIOPHYSICS AND BASIC BIOMEDICAL RESEARCH**  
**Research Article**  
**Probing muscle recovery following downhill running using precise mapping of MRI  $T_2$  relaxation times,** Maria Holodov, Irit Markus,  
Chen Solomon, Shimon Shahar,  
Tamar Blumenfeld-Katzir, Yftach Gepner,  
and Noam Ben-Eliezer .....1990  
*Published online 22 June 2023*

- Technical Notes**  
**Lung  $T_2^*$  mapping using 3D ultrashort TE with tight intervals  $\delta TE$ ,** Vadim Malis,  
Yoshimori Kassai, Diana Vucevic, Won C. Bae,  
Yoshiharu Ohno, Andrew Yen,  
and Mitsue Miyazaki.....2001  
*Published online 08 June 2023*

- Efficient prediction of MRI gradient-induced heating for guiding safety testing of conductive implants,** Umberto Zanollo,  
Carina Fuss, Alessandro Arduino,  
and Oriano Bottauscio .....2011  
*Published online 29 June 2023*

## ■ COMPUTER PROCESSING AND MODELING

- Rapid Communication**  
**SSL-QALAS: Self-Supervised Learning for rapid multiparameter estimation in quantitative MRI using 3D-QALAS,**  
Yohan Jun, Jaejin Cho, Xiaoqing Wang,  
Michael Gee, P. Ellen Grant, Berkin Bilgic,  
and Borjan Gagoski.....2019  
*Published online 06 July 2023*

- Research Articles**  
**Adapting model-based deep learning to multiple acquisition conditions: Ada-MoDL,**  
Aniket Pramanik, Sampada Bhate, Saurav Sajib,  
Samir D. Sharma, and Mathews Jacob.....2033  
*Published online 18 June 2023*

- Noise2Recon: Enabling SNR-robust MRI reconstruction with semi-supervised and self-supervised learning,** Arjun D. Desai,  
Batu M. Ozturkler, Christopher M. Sandino,  
Robert Boutin, Marc Willis, Shreyas Vasanawala,  
Brian A. Hargreaves, Christopher Ré,  
John M. Pauly, and Akshay S. Chaudhari .....2052  
*Published online 10 July 2023*

- Learned spatiotemporal correlation priors for CEST image denoising using incorporated global-spectral convolution neural network,**  
Huan Chen, Xinran Chen, Liangjie Lin,  
Shuhui Cai, Congbo Cai, Zhong Chen,  
Jiadi Xu, and Lin Chen .....2071  
*Published online 18 June 2023*

- $B_1$  mapping using pre-learned subspaces for quantitative brain imaging,** Tianxiao Zhang,  
Yibo Zhao, Wen Jin, Yudu Li, Rong Guo,  
Ziwen Ke, Jie Luo, Yao Li, and Zhi-Pei Liang.....2089  
*Published online 22 June 2023*

- A comparison of phase unwrapping methods in velocity-encoded MRI for aortic flows,**  
Miriam Lölcke, Jeremias Esteban Garay Labra,  
Pamela Franco, Sergio Uribe,  
and Cristóbal Bertoglio.....2102  
*Published online 22 June 2023*

- High-fidelity direct contrast synthesis from magnetic resonance fingerprinting,** Ke Wang,  
Mariya Doneva, Jakob Meineke, Thomas Amthor,  
Ekin Karasan, Fei Tan, Jonathan I. Tamir,  
Stella X. Yu, and Michael Lustig .....2116  
*Published online 18 June 2023*

## CONTENTS

- Feasibility of online non-rigid motion correction for high-resolution supine breast MRI,** Karyna Isaieva, Camille Meullenet, Pierre-André Vuissoz, Marc Fauvel, Lena Nohava, Elmar Laistler, Mohamed Aziz Zeroual, Philippe Henrot, Jacques Felblinger, and Freddy Odille ..... 2130  
*Published online 28 June 2023*

- Measuring cardiomyocyte cellular characteristics in cardiac hypertrophy using diffusion-weighted MRI,** Mohsen Farzi, Sam Coveney, Maryam Afzali, Marie-Christine Zdora, Craig A. Lygate, Christoph Rau, Alejandro F. Frangi, Erica Dall'Armellina, Irvin Teh, and Jürgen E. Schneider ..... 2144  
*Published online 22 June 2023*

- Eddy currents analysis methods for an MRI longitudinal gradient coil,** Sadeq S Alsharafi, Ahmed M Badawi, and AbdEl-Monem M El-Sharkawy ..... 2158  
*Published online 19 July 2023*

- 4Dflow-VP-Net: A deep convolutional neural network for noninvasive estimation of relative pressures in stenotic flows from 4D flow MRI,** Ruponti Nath, Amirkhosro Kazemi, Sean Callahan, Marcus F. Stoddard, and Amir A. Amini ..... 2175  
*Published online 26 July 2023*

- Technical Note**  
**Evaluating efficient SENSE algorithms to deblur spiral MRI with fat/water separation,** Tzu Cheng Chao, Xi Peng, Dinghui Wang, and James G. Pipe ..... 2190  
*Published online 28 June 2023*

## ■ HARDWARE AND INSTRUMENTATION

- Research Article**  
**Wideband receive-coil array design using high-impedance amplifiers for broadband decoupling,** Chenhao Sun, Courtney C. Bauer, Jue Hou, and Steven M. Wright ..... 2198  
*Published online 29 June 2023*