

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

## CONTENTS

### ■ LETTER TO THE EDITOR

- Walking with the ISMRM in the footprints of our MR history,** Stefano Mandija, Chao Ma, Ruiliang Bai, Li Feng, Francesco Giganti, Andrada Ianus, Hong-Hsi Lee, Fei Li, Thomas Welton, and Fernando Calamante.....883  
*Published online 10 November 2022*

### ■ SPECTROSCOPIC METHODOLOGY

#### Research Article

- Quantification of GABA concentration measured noninvasively in the human posterior cingulate cortex with 7 T ultra-short-TE MR spectroscopy,** Guglielmo Genovese, Dinesh K. Deelchand, Melissa Terpstra, and Małgorzata Marjańska.....886  
*Published online 13 November 2022*

### ■ IMAGING METHODOLOGY

#### Review-Symposium

- Summary and overview of the first ISMRM workshop on magnetic resonance elastography, August 25–26, 2022, Berlin, Germany,** Jing Guo, Stephan Marticorena Garcia, and Ingolf Sack .....898  
*Published online 06 November 2022*

#### Rapid Communication

- Motion-robust, blood-suppressed, reduced-distortion diffusion MRI of the liver,** Ruiqi Geng, Yuxin Zhang, James Rice, Matthias R. Muehler, Jitka Starekova, David R. Rutkowski, Nataliya V. Uboha, Ali Pirasteh, Alejandro Roldán-Alzate, Arnaud Guidon, and Diego Hernando.....908  
*Published online 20 November 2022*

#### Research Articles

- Joint K-space and Image-space Parallel Imaging (KIPI) for accelerated chemical exchange saturation transfer acquisition,** Tao Zu, Yi Sun, Dan Wu, and Yi Zhang .....922  
*Published online 06 November 2022*

**Simultaneous Optimization of MP2RAGE T<sub>1</sub>-weighted (UNI) and FLuid And White matter Suppression (FLAWS) brain images at 7T using Extended Phase Graph (EPG) Simulations,**

- Ayşe Sila Dokumacı, Fraser R. Aitken, Jan Sedlacik, Pip Bridgen, Raphael Tomi-Tricot, Ronald Mooiweer, Katy Vecchiato, Tom Wilkinson, Chiara Casella, Sharon Giles, Joseph V. Hajnal, Shaihan J. Malik, Jonathan O'Muircheartaigh, and David W. Carmichael .....937  
*Published online 09 November 2022*

**High SNR rapid T<sub>1</sub>-weighted MPRAGE using spiral imaging with long readouts and improved deblurring,** Dinghui Wang,

- Ryan K. Robison, Zhiqiang Li, and James G. Pipe .....951  
*Published online 02 November 2022*

**Rapid 3D absolute B<sub>1</sub><sup>+</sup> mapping using a sandwiched train presaturated TurboFLASH sequence at 7 T for the brain and heart,**

- James L. Kent, Iulius Dragonu, Ladislav Valkovič, and Aaron T. Hess .....964  
*Published online 06 November 2022*

**Free-breathing 2D radial cine MRI with respiratory auto-calibrated motion correction (RAMCO),**

- Guruprasad Krishnamoorthy, Joao Tourais, Jouke Smink, Marcel Breeuwer, and Marc Kouwenhoven .....977  
*Published online 08 November 2022*

**Asynchronous magnetic resonance elastography: Shear wave speed reconstruction using noise correlation of incoherent waves,**

- Khoi D. Nguyen, Benjamin P. Bonner, Anna N. Foster, Mehdi Sadighi, and Christopher T. Nguyen.....990  
*Published online 27 October 2022*

**Rapid estimation of 2D relative B<sub>1</sub><sup>+</sup>-maps from localizers in the human heart at 7T using deep learning,**

- Felix Krueger, Christoph Stefan Aigner, Kerstin Hammernik, Sebastian Dietrich, Max Lutz, Jeanette Schulz-Menger, Tobias Schaeffter, and Sebastian Schmitter .....1002  
*Published online 06 November 2022*

# CONTENTS

**In vivo T<sub>1</sub> mapping of neonatal brain tissue at 64 mT**, Francesco Padormo, Paul Cawley, Louise Dillon, Emer Hughes, Jennifer Almalbis, Joanna Robinson, Alessandra Maggioni, Miguel De La Fuente Botella, Dan Cromb, Anthony Price, Lori Arlinghaus, John Pitts, Tianrui Luo, Dingtian Zhang, Sean C. L. Deoni, Steve Williams, Shaihan Malik, Jonathan O'Muircheartaigh, Serena J. Counsell, Mary Rutherford, Tomoki Arichi, A. David Edwards, and Joseph V. Hajnal ..... 1016  
*Published online 13 November 2022*

**Robust dual-module velocity-selective arterial spin labeling (dm-VSASL) with velocity-selective saturation and inversion**, Jia Guo ..... 1026  
*Published online 06 November 2022*

**Rapid whole-brain myelin imaging with selective inversion recovery and compressed SENSE**, Ping Wang, Nicholas Sisco, Wonsuk Yoo, Aimee Borazanci, John Karis, and Richard Dortch ..... 1041  
*Published online 09 November 2022*

**Image downsampling expedited adaptive least-squares (IDEAL) fitting improves intravoxel incoherent motion (IVIM) analysis in the human kidney**, Julia Stabinska, Helge J. Zöllner, Thomas A. Thiel, Hans-Jörg Wittsack, and Alexandra Ljimini ..... 1055  
*Published online 23 November 2022*

**On the water-fat in-phase assumption for quantitative susceptibility mapping**, Christof Boehm, Sarah Schlaeger, Jakob Meineke, Kilian Weiss, Marcus R. Makowski, and Dimitrios C. Karampinos ..... 1068  
*Published online 02 November 2022*

## Technical Notes

**A 3D stack-of-spirals approach for rapid hyperpolarized <sup>129</sup>Xe ventilation mapping in pediatric cystic fibrosis lung disease**, Brandon Zanette, Samal Munidasa, Yonni Friedlander, Felix Ratjen, and Giles Santyr ..... 1083  
*Published online 25 November 2022*

**Arterial spin labeling using spatio-temporal encoding readout for robust perfusion imaging in inhomogeneous magnetic fields**, Suzanne L. Franklin, Megan Schuurmans, Martins Otikovs, Pim T. S. Borman, Matthias J. P. van Osch, and Clemens Bos ..... 1092  
*Published online 24 November 2022*

## PRECLINICAL AND CLINICAL IMAGING

### Research Articles

**Influence of image contrasts and reconstruction methods on the classification of multiple sclerosis-like lesions in simulated sodium magnetic resonance imaging**, Laurent Ruck, Angelika Mennecke, Tobias Wilferth, Sebastian Lachner, Max Müller, Nico Egger, Arnd Doerfler, Michael Uder, and Armin M. Nagel ..... 1102  
*Published online 13 November 2022*

**Childhood to adulthood: Accounting for age dependence in healthy-reference distributions in <sup>129</sup>Xe gas-exchange MRI**, Joseph W. Plummer, Matthew M. Willmering, Zackary I. Cleveland, Christopher Towe, Jason C. Woods, and Laura L. Walkup ..... 1117  
*Published online 13 November 2022*

**Analysis of simplicial complexes to determine when to sample for quantitative DCE MRI of the breast**, Julie C. DiCarlo, Angela M. Jarrett, Anum S. Kazerouni, John Virostko, Anna Sorace, Kalina P. Slavkova, Stefanie Woodard, Sarah Avery, Debra Patt, Boone Goodgame, and Thomas E. Yankeelov ..... 1134  
*Published online 02 November 2022*

### Technical Note

**Multi-modal MRI reveals changes in placental function following preterm premature rupture of membranes**, Jana Hutter, Paddy J. Slator, Carla Avena Zampieri, Megan Hall, Mary Rutherford, and Lisa Story ..... 1151  
*Published online 18 October 2022*

## COMPUTER PROCESSING AND MODELING

### Research Articles

**Tensor denoising of multidimensional MRI data**, Jonas L. Olesen, Andrada Ianus, Leif Østergaard, Noam Shemesh, and Sune N. Jespersen ..... 1160  
*Published online 11 October 2022*

**MAGORINO: Magnitude-only fat fraction and R<sub>2</sub><sup>\*</sup> estimation with Rician noise modeling**, Timothy J. P. Bray, Alan Bainbridge, Emma Lim, Margaret A. Hall-Craggs, and Hui Zhang ..... 1173  
*Published online 02 November 2022*

**Parameter estimation for WMTI-Watson model of white matter using encoder-decoder recurrent neural network**, Yujian Diao and Ileana Jelescu ..... 1193  
*Published online 13 November 2022*

# CONTENTS

**Building a tissue-unbiased brain template of fiber orientation distribution and tractography with multimodal registration,** Jinglei Lv, Rui Zeng, Mai Phuong Ho, Arkiev D'Souza, and Fernando Calamante..... 1207  
*Published online 26 October 2022*

**Model-informed unsupervised deep learning approaches to frequency and phase correction of MRS signals,** Amirmohammad Shamaei, Jana Starcukova, Iveta Pavlova, and Zenon Starcuk..... 1221  
*Published online 11 November 2022*

## ■ HARDWARE AND INSTRUMENTATION

### Research Articles

**Scalable and modular 8-channel transmit and 8-channel flexible receive coil array for <sup>19</sup>F MRI of large animals,** Ali Caglar Özen, Felix Spreter, Waldemar Schimpf, Johannes Fischer, Serhat Ilbey, Simon Reiss, Alexander Maier, Dominik von Elverfeldt, Timo Heidt, Constantin von zur Mühlen, and Michael Bock..... 1237  
*Published online 13 October 2022*

**Quadrature transceive wireless coil: Design concept and application for bilateral breast MRI at 1.5 T,** Viktor Puchnin, Aigerim Jandaliyeva, Anna Hurshkainen, Georgiy Solomakha, Anton Nikulin, Polina Petrova, Anna Lavrenteva, Anna Andreychenko, and Alena Shchelokova..... 1251  
*Published online 06 November 2022*

**A cryogenic 14-channel <sup>13</sup>C receiver array for 3T human head imaging,** Wenjun Wang, Juan Diego Sánchez-Heredia, Rie Beck Olin, Esben Søvsø Szocska Hansen, Christoffer Laustsen, Vitaliy Zhurbenko, and Jan Henrik Ardenkjær-Larsen..... 1265  
*Published online 02 November 2022*

## ■ ERRATUM

**Erratum to: Velocity-selective arterial spin labeling perfusion MRI: A review of the state of the art and recommendations for clinical implementation (Magn Reson Med. 2022; 88:1528–1547),** Qin Qin, David C. Alsop, Divya S. Bolar, Luis Hernandez-Garcia, James Meakin, Dapeng Liu, Krishna S. Nayak, Sophie Schmid, Matthias J. P. van Osch, Eric C. Wong, Joseph G. Woods, Greg Zaharchuk, Moss Y. Zhao, Zungho Zun, and Jia Guo ..... 1278  
*Published online 24 November 2022*

**Erratum to: Deep learning-based MR fingerprinting ASL ReconStruction (DeepMARS) (Magn Reson Med. 2020; 84:1024–1034),** Qiang Zhang, Pan Su, Zhensen Chen, Ying Liao, Shuo Chen, Rui Guo, Haikun Qi, Xuesong Li, Xue Zhang, Zhangxuan Hu, Hanzhang Lu, and Huijun Chen..... 1280  
*Published online 09 December 2022*

**Erratum to: Point-of-care magnetic resonance technology to measure liver fat: Phantom and first-in-human pilot study (Magn Reson Med. 2022;88:1794–1805),** Mark Barahman, Eduardo Grunvald, Pablo J. Prado, Alejandro Bussandri, Walter C. Henderson, Tanya Wolfson, Kathryn J. Fowler, and Claude B. Sirlin ..... 1281  
*Published online 09 December 2022*