

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

CONTENTS

■ SPECTROSCOPIC METHODOLOGY

Research Article

- GABA+-Edited Magnetic Resonance Spectroscopy Deep Learning Quality Assessment Framework,** Hanna Bugler, Roberto Souza, and Ashley D. Harris..... 1028
Published online 27 April 2026

- A 3T MRS Sequence for Quantification of Glutathione in Human Brain Using Stepwise Filtering,** Xue Yang, Da-Xiu Wei, Huilin Zhang, Gaiying Li, Caixia Fu, and Ye-Feng Yao 1042
Published online 12 May 2026

■ PRECLINICAL AND CLINICAL SPECTROSCOPY

Research Article

- Hemodynamic Modeling and Phase-Adjustable Reconstruction of Hyperpolarized Cardiac ¹³C MRS Using ¹H Cine and ECG Timing,** Sung-Han Lin, Corey Mozingo, Crystal E. Harrison, Kelley A. Derner, Craig R. Malloy, and Jae Mo Park 1054
Published online 10 May 2026

Technical Note

- Faster and More Robust CK Reaction Rate Estimation at 3T Using Acquisition-Weighted ³¹P Cardiac 1D-MRSI With Compartment-Based Reconstruction,** Aaron Axford, Iveta Pajanová, William D. Watson, Andrew C. Tyler, Roshan Xavier, Ferenc E. Mózes, Oliver J. Rider, Damian J. Tyler, and Ladislav Valkovič..... 1066
Published online 27 April 2026

- Transverse Relaxation Time Constant of Cystathionine in Human Glioma at 3 T,** Dinesh K. Deelchand, Francesca Branzoli, Jamie D. Walls, Lucia Nichelli, Marc Sanson, Bertrand Mathon, and Małgorzata Marjańska 1076
Published online 21 May 2026

■ IMAGING METHODOLOGY

Research Article

- Dependence of Magnetic Resonance Elastography-Derived Stiffness Values on Selected Imaging Parameters,** Łukasz Hańczyk, Marzanna Obrzut, Marian Cholewa, and Vitaliy Atamaniuk 1083
Published online 22 April 2026

- Optimized Reduced Field of View and Fat Suppression Methods for Interleaved Multislice In Vivo Cardiac Diffusion Tensor Imaging,** Yaqing Luo, Pedro F. Ferreira, Ke Wen, Ricardo Wage, Guang Yang, Dudley J. Pennell, Sonia Nielles-Vallespin, and Andrew D. Scott 1097
Published online 22 April 2026

- Simultaneous Acquisition of Magnetic Resonance Elastography (MRE) and Diffusion Tensor Imaging (DTI) Optimized for Human Brain,** Shujun Lin, Bradley P. Sutton, Richard L. Magin, Aaron T. Anderson, and Dieter Klatt..... 1111
Published online 04 May 2026

- How Much Does Motion Matter? Evaluating the Motion Robustness of pTx Pulses at 7 T,** Jocelyn Philippe, Natalia Pato Montemayor, Ludovica Romanin, Emilie Sleight, Antoine Klauser, Tommaso Di Noto, Lina Bacha, Bénédicte Maréchal, Jürgen Herrler, Patrick A. Liebig, Robin M. Heidemann, Jean-Philippe Thiran, Tom Hilbert, Gian Franco Piredda, and Thomas Yu 1121
Published online 24 April 2026

- DynaTOF: Time-Resolved Noncontrast Cerebral MR Angiography Using Spatially Modulated RF Saturation,** Naoyuki Takei, Keita Fujii, Xucheng Zhu, Yuichi Suzuki, Satoru Miyawaki, Motoyuki Umekawa, Satoshi Koizumi, Tetsuya Wakayama, Shiori Amemiya, and Osamu Abe..... 1134
Published online 11 May 2026

- Adaptive Respiratory Motion Correction Framework for Ungated Hepatic 4D Flow MRI,** Ruiyu Cao, Shaohang Li, Aiqi Sun, Bingyi Wang, Yuhui Nie, Hongwei Li, Junpu Hu, Ne Yang, Jiayu Zhu, Ying-Hua Chu, Ning Jin, Xingfeng Shao, Ruokun Li, He Wang, and Hao Li 1148
Published online 27 April 2026

- SNR-Efficient Inhomogeneous Magnetization Transfer (ihMT) for Clinical Applications at 7 T,** Timothy Anderson, Niklas Wallstein, Lucas Soustelle, Thomas Troalen, Gopal Varma, David C. Alsop, Maxime Guye, Guillaume Duhamel, and Olivier M. Girard 1162
Published online 11 May 2026

- Concomitant Gradient Effects Across Field Strengths and Gradient Amplitudes: Improved Estimation of Errors and Correction of Concomitant Dephasing and Diffusion Weighting,** Viktor Olsson, Felix Mortensen, Emil Ljungberg, Frederik Testud, Ronnie Wirestam, Malwina Molendowska, and Filip Szczepankiewicz..... 1178
Published online 12 June 2026

- An Interpretable Deep-Learning Approach for Efficient CEST Parameter Quantification: Importance-Ranked Saturation Transfer MRI Protocol,** Munendra Singh, Sultan Z. Mahmud, Kevin Ju, and Hye-Young Heo 1192
Published online 11 May 2026

CONTENTS

Ultrafast fMRI Detects Age-Related Changes in Harmonics of Cardiac Pulsations in the Brain at 7 T, Charles Marchini, Dema Abdelkarim, Yuhui Chai, Monica Fabiani, Gabriele Gratton, and Bradley P. Sutton 1206
Published online 11 May 2026

SeExNet: A Self-Supervised Physics-Informed Framework for Multi-Channel Joint RF and Gradient Waveform Optimization in 2D Spatially Selective Excitation, Yuliang Xiao, Jason Rock, Zhe Wu, Jamie Near, Mark Chiew, and Simon J. Graham 1219
Published online 15 May 2026

Ventilation Imaging of the Lung at 0.55T With Continuous Slice Cycling, Andrea Leuthard, Grzegorz Bauman, Katrin E. Hostettler, Maurice Pradella, and Oliver Bieri 1235
Published online 15 May 2026

Single-Shot 2D Radial Echo Planar Imaging for Functional MRI, Christoph A. Rettenmeier, Zidan Yu, Krystalyn Edwards-Calma, Kai Tobias Block, and V. Andrew Stenger 1245
Published online 17 May 2026

SNR-Enhanced Whole-Brain Chemical Exchange Saturation Transfer Imaging by Optimized Variable Flip Angles, Xingwang Yong, Shanshan Lu, Chunqiu Su, Zhechuan Dai, Tao Zu, Yi-Cheng Hsu, and Yi Zhang 1261
Published online 30 May 2026

Technical Note
A Magnetic Resonance Fingerprinting Approach for Simultaneous T_1 - and PRFS-Based 3D MR-Thermometry, Moritz Gutt, Dominik Horstmann, Othmar Belker, Simon Schröer, Daniel Dux, Frank Wacker, Marcel Gutberlet, and Bennet Hensen 1274
Published online 22 April 2026

Cubic Millimeter High Resolution 3D Inner-Volume GRASE (IV-GRASE) CEST MRI Using T_1 -Integrated Variable Density CAIPI Sampling With Temporal Random Walk: A Feasibility Study, Hahnsung Kim, Suhyung Park, Julius Juhyun Chung, Jinsuh Kim, Kimberly B. Hoang, Ranliang Hu, Jeffrey Olson, David A. Feinberg, and Phillip Zhe Sun 1283
Published online 08 May 2026

DeepRelaxo: Fast Mono-Exponential Magnitude Brain $R2^*$ Mapping With Reduced Echoes Using Self-Supervised Deep Learning, Samiha Prima, Zhuang Xiong, Alan H. Wilman, and Hongfu Sun 1293
Published online 27 April 2026

Time-Conditioned Zero-Shot Self-Supervised Reconstruction for Accelerated 3D Ultra-Low-Field MRI, Mart W. J. van Straten, Beatrice Lena, Chloé Najac, Ruben van den Broek, Peter Börner, Andrew Webb, and Yiming Dong 1303
Published online 29 April 2026

Physics-Guided Neural Network for Quantitative Parameter Mapping Using Balanced Steady State Free Precession MRI, Hye-Ryeong Choi, Huan Minh Luu, and Sung-Hong Park 1313
Published online 09 May 2026

Fast and Robust Diffusion Posterior Sampling for MR Image Reconstruction Using the Preconditioned Unadjusted Langevin Algorithm, Moritz Blumenthal, Tina Holliher, Jonathan I. Tamir, and Martin Uecker 1323
Published online 10 May 2026

Toward Free-Breathing Renal CEST MRI: Preclinical Evaluation of a Novel Prospective Respiratory Triggering Approach, Patrik Jan Gallinnis, Martin Duša, Julia Stabinska, Pavla Volešák Francová, Ruslan Garipov, Margarita Tkachenko, Karl Ludger Radke, Gerald Antoch, Alexandra Ljimini, Hans-Jörg Wittsack, Luděk Šefc, Anja Müller-Lutz, and Vít Herynek 1333
Published online 17 May 2026

■ PRECLINICAL AND CLINICAL IMAGING

Research Article
5D Flow MRI Reveals Respiration-Driven Changes in Blood Flow Energetics in Congenital Heart Disease, Thara Nallamothu, Elizabeth K. Weiss, Justin Baraboo, Joshua D. Robinson, Cynthia K. Rigsby, Christopher W. Roy, Matthias Stuber, and Michael Markl 1342
Published online 26 April 2026

Evaluating the Influence of Injury-Induced Microstructural Variations on the Efficacy of a Diffusion MRI-Derived Axon Diameter Surrogate, Hannah E. Alderson, Chaoqi Mu, Li Min Chen, Mark D. Does, and Kevin D. Harkins 1355
Published online 10 May 2026

■ BIOPHYSICS AND BASIC BIOMEDICAL RESEARCH

Research Article
Evaluation of Third-Order Motion-Compensated Cardiac Diffusion Tensor Imaging Across Cardiac Phases Using an Ultra-High-Performance Clinical Scanner, Ke Wen, Pedro F. Ferreira, Alberto Di Biase Oemick, Ricardo Wage, Karl P. Kunze, Fanwen Wang, Dudley J. Pennell, Andrew D. Scott, and Sonia Nelles-Vallespin 1365
Published online 22 April 2026

Technical Note
Detection of Altered Muscle Glycogen- and NOE-Weighted CEST MRI Signals in an Acid Alpha-Glucosidase-Deficient Mouse Model of Pompe Disease Using QUASS-Enhanced Multi-Pool Quantitative CEST (QCEST) Imaging, Limin Wu, Hahnsung Kim, and Phillip Zhe Sun 1379
Published online 04 May 2026

■ COMPUTER PROCESSING AND MODELING

Research Article
Reconstruction of Under-Sampled Images and Concurrent Optimization of Sampling Masks for 3D Carotid Simultaneous Non-Contrast Angiography and IntraPlaque Hemorrhage MRI With Model Based Deep Learning Architecture (deepSNAP), Jiachen Ji, Chuyu Liu, Qinxin Wang, Shuo Chen, Zhongsen Li, Le He, Xihai Zhao, and Rui Li 1387
Published online 24 April 2026

CONTENTS

Rapid Generation of Subject-Specific Human Models With Detailed Tissue Structures for Timely Individualized SAR Assessment, Jiaqi Hu, Jiamin Liang, Fangyong Sun, Yantu Huang, Le Zhang, Jinqiang He, Kun Zhu, Zhibin Li, Dehe Weng, Junle Qu, and Tingqiang Xue 1401
Published online 29 May 2026

Four Directions, One Solution: Enabling Rapid Diffusion Tensor MRI for Ultra-Low Field Using Deep Learning, Joshua Mawuli Ametepe, James Gholam, Leandro Beltrachini, Mara Cercignani, and Derek Kenton Jones 1413
Published online 11 May 2026

VQ-Wave: A Physics-Driven Spatiotemporal Deep Learning Approach for Noncontrast-Enhanced Lung Ventilation and Perfusion MRI, Grzegorz Bauman, Pavlos Panos, Philipp Latzin, and Oliver Bieri 1427
Published online 10 May 2026

GRACE-MORE: A Motion-Resolved Golden-Angle Radial CEST MRI Technique for Free-Breathing Abdominal Imaging, Yitian Fan, Chongxue Bie, Xinding Jiang, Zhekai Chen, Meijuan Li, Yang Zhou, and Lin Chen 1443
Published online 15 May 2026

Technical Note
Uncertainty Quantification for Cardiac Diffusion Tensor Imaging Without Additional Datasets, Sam Coveney, Irvin Teh, May Lwin, Mehak Asad, Isaac Watson, Maryam Afzali, Erica Dall'Armellina, and Jürgen E. Schneider 1458
Published online 10 May 2026

Fully-Constrained Variable Projection for Water-Fat Models, Carl Ganter, Jonathan Stelter, Louis Peyratoux, Dimitrios C. Karampinos, and Oliver Bieri 1464
Published online 10 May 2026

■ HARDWARE AND INSTRUMENTATION

Research Article
Field-Based Spatial Self-Registration of Multicoil Hardware for B_0 Field Control, Isabelle Zinghini, Ian Macleod, Carlotta Ianniello, Sebastian Theilenberg, and Christoph Juchem 1474
Published online 12 May 2026

Reducing Motion Artifact in High Resolution 7 T MRI Using the Magnetic Resonance Minimal Motion ("MR-MinMo") Head Stabilization Device, Jyoti Mangal, Simon Richardson, Yannick Brackener, Matthew Gardner, Pierluigi Di Cio, Chiara Casella, Shaihan Malik, Jo Hajnal, Martina F. Callaghan, Fred Dick, and David W. Carmichael 1486
Published online 03 June 2026

■ ESR

Research Article
Combining Oxygen-Enhanced MRI and Electron Paramagnetic Resonance Oximetry for Quantitative OE-MRI (qOE-MRI) as a Method for Mapping Absolute Oxygen Levels (pO_2) in Tumors, Conner S. Ubert, Victor B. Kassey, Maciej M. Kmiec, Diana J. Wallin, Alireza Kheirollah, Sergey V. Petryakov, Ryan C. O'Connell, Philip E. Schaner, and Periannan Kuppusamy 1502
Published online 11 May 2026