Volume 96
Number 6

MAGNETIC RESONANCE IN MEDICINE

December
2026

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

CONTENTS

■ ANNOUNCEMENT

Young Investigator Awards Winners.....2568
Published online 26 August 2026

■ LETTER TO THE EDITOR

On the Measurement and Modeling of R_1 Relaxation Anisotropy in Human Brain White Matter, Yuxi Pang 2572
Published online 14 August 2026

■ REPLY

The Transient Hydrogen Bond Model Captures Salient Features of Central Nervous System Tissue Cellular Microstructure Relevant to MR Signal Relaxation, Dmitriy A. Yablonskiy, Risto A. Kauppinen, Ekaterina Paasonen, Jeromy Thotland, Mervi Könönen, Pramod Pisharady, Christophe Lenglet, Juhana M. Hakumäki, Olli H. J. Gröhn, Michael Garwood, and Alexander L. Sukstanskii 2575
Published online 14 August 2026

■ SPECTROSCOPIC METHODOLOGY

Technical Note

Improving Fetal Single-Voxel Magnetic Resonance Spectroscopy With Spectral Registration, Andres Saucedo, Qinqin Yang, and Ali Gholipour.....2578
Published online 23 July 2026

■ PRECLINICAL AND CLINICAL SPECTROSCOPY

Research Article

Correlating Pulmonary Hemodynamics With HP ^{129}Xe Dissolved-Phase MRSI in a Controlled Porcine Intervention Study, Markus Phillip Andersen, Mattias Hedegaard Kristensen, Esben Søvsø Szocska Hansen, Rolf F. Schulte, Mohsen Redda, Uffe Kjærgaard, Michael Vaeggemose, and Christoffer Laustsen 2588
Published online 06 August 2026

■ IMAGING METHODOLOGY

Toolbox

***p*-Brain: A Modular Open-Source Framework for Automated Quantitative DCE-MRI of Cerebral Perfusion, Microvasculature, and Blood–Brain Barrier Permeability,** Edis D. Tireli, Stig P. Cramer, Ulrich Lindberg, Derya Tireli, Mark B. Vestergaard, and Henrik B. W. Larsson.....2601
Published online 14 August 2026

Research Article

Localized Quadratic RF Encoded Spin-Echo With Spiral-PRIME Reconstruction: A Practical Alternative to 3D FSE for High-Resolution Volumetric Brain MRI, Guruprasad Krishnamoorthy, Julia V. Velikina, and James G. Pipe 2615
Published online 18 August 2026

Comparative Performance Analysis of an Open Source Motion-Compensated Cardiac Diffusion Sequence Across Different MRI Systems and Gradient Strengths—A Pilot Study, Eric Arbes, Ariel Hannum, Johannes Fischer, Qingping Chen, Sebastian Littin, Alexander Maier, Michael Bock, and Simon Reiss.....2629
Published online 20 July 2026

Human In Vivo Validation of Frequency-Dependent QTI, Svenja Niesen, Marten Veldmann, Ali Ajouz, and Tony Stöcker 2642
Published online 13 August 2026

1D Pre-Acquisition Navigator Correcting Respiratory-Induced Field Fluctuations in Multi-Echo Gradient-Echo Imaging of the Thoracic Spinal Cord, Alicia E. Cronin, Alexandre D'Astous, Nathan Williams, Antoine Guénette, Aimee Salakhov, Seth Stubblefield, Colin D. McKnight, Lipika Narisetti, Subramaniam Sriram, Seth A. Smith, Ryan K. Robison, Guillaume Gilbert, Julien Cohen-Adad, and Kristin P. O'Grady 2660
Published online 25 July 2026

Time-Efficient Interleaved Spin Density-Weighted and Inversion Recovery ^{23}Na MRI of the Human Calf Muscle at 7 T, Tobias Wilferth, Fiona Meyer, Jordan M. Höhn, Michael Uder, and Armin M. Nagel.....2675
Published online 21 July 2026

Reference-Superimposed Reconstruction (RS-Recon) for Arterial Spin Labeling, Jia Guo 2685
Published online 27 July 2026

Image-Derived Volumetry During Forced Expiration Using a 3D Fermat Looped, Orthogonally Encoded Trajectory, Sebastian Scheidel, Viktor Hartung, Matthias Stephan Anders, Corona Metz, Herbert Köstler, Simon Veldhoen, and Tobias Wech 2698
Published online 27 July 2026

Adapted Linear Binning Method to Assess Pulmonary Ventilation and Perfusion in Children Using Lung Matrix Pencil Decomposition (MP)-MRI, Marion Curdy, Carmen Streibel, Oliver Bieri, Elisabeth Kieninger, Florian Wyler, Lukas Ebner, Grzegorz Bauman, and Philipp Latzin.....2708
Published online 14 August 2026

An Open-Source, Reproducible MRI Data Acquisition and Reconstruction Workflow Using Pulseq: Multi-Site and Cross-Vendor Validation, Qingping Chen, Thomas H. M. Roos, Amaya Murguia, Yuhai Xie, Zheng Liu, Pengcheng Xu, Shohei Fujita, Sebastian Littin, Yogesh Rathi, Jiayu Zhu, Berkin Bilgic, Jon-Fredrik Nielsen, and Maxim Zaitsev.....2721
Published online 06 August 2026

15222594, 2026, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/mrm.70605 by Shannon Stepanian , Wiley Online Library on [20/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

CONTENTS

Servo Navigation and Phase Equalization Enhanced by Run-Time Stabilization (PEERS) for 3D EPI Time Series, Malte Riedel, Thomas Ulrich, Samuel Bianchi, and Klaas P. Pruessmann 2739
Published online 31 August 2026

Calibration-Free Estimation of Cerebrovascular Reactivity From Resting-State BOLD fMRI Using Reconstructed Respiratory Fluctuations, Abdoljalil Addeh, Ethan Church, Muhammad Mahajna, Karen Ardila, Pattarawut Charatpangoon, Alexander D. Cohen, Yang Wang, Rebecca J. Williams, G. Bruce Pike, and M. Ethan MacDonald 2755
Published online 06 August 2026

Evaluation of *k*-Space Acquisition Strategies in Nonuniform B_0 (NuBo) MRI, Yonghyun Ha, Chenhao Sun, Anja Samardzija, Sajad Hosseinnezhadian, Sebastian Theilenberg, Tao Li, Guang Yang, Ryan Gross, Flor P. Rodriguez, Heng Sun, Horace Z. Zhang, Gigi Galiana, and R. Todd Constable 2767
Published online 11 August 2026

Clinical Soma and Neurite Density Imaging (SANDI): Translational Microstructure Mapping on Clinical 3T MRI Scanners, Hansol Lee, Kwok-Shing Chan, Yixin Ma, Dongsuk Sung, Sohyun Han, DongKyu Lee, Eva A. Krijnen, Laleh Eskandarian, Aneri Bhatt, Julianna Gerold, HyungJoon Cho, Susie Y. Huang, and Hong-Hsi Lee 2780
Published online 28 August 2026

Technical Note
Training Deep Learning Based Dynamic MR Image Reconstruction Using Synthetic Fractals, Anirudh Raman, Olivier Jaubert, Mark Wrobel, Tina Yao, Ruaraidh Campbell, Rebecca R Baker, Ruta Virsinskaite, Daniel Knight, Michael Quail, Jennifer A Steeden, and Vivek Muthurangu 2795
Published online 20 July 2026

Self-calibrated B_1^+ and B_0 Field Inhomogeneities Estimation (SAFE) in 3D Magnetic Resonance Fingerprinting, Mengze Gao, Xiaozhi Cao, Daniel Raz Abraham, Zihan Zhou, Nan Wang, Congyu Liao, Yang Yang, Hanlin Sun, Hongwei Li, Yan Bai, Yu Shen, Yaping Wu, Meiyun Wang, and Kawin Setsompop 2803
Published online 21 July 2026

A Generalized Approach to Solving Deep Learning-Based Quantitative Susceptibility Mapping and Quantitative Blood Oxygen Level Dependent Magnitude (QSM + qBOLD or QQ) for Oxygen Extraction Fraction (OEF) Mapping Across Diverse Acquisition Schemes, Tian Qiu, Ada Ally, Arpita Misra, Gloria C. Chiang, Thanh D. Nguyen, Susan A. Gauthier, Shun Zhang, Yi Wang, and Junghun Cho 2812
Published online 05 August 2026

Combining Prospective and Retrospective Motion Correction, Using the Scout Accelerated Motion Estimation and Reduction (SAMER) Framework, for Rapid and Motion-Robust 2D TSE Imaging, Hongli Fan, Bryan Clifford, Michael Koenig, Daniel Nicolas Splitthoff, Yulin Chang, Xiaoqing Wang, Onur Afacan, Daniel Polak, Simon Keith Warfield, and Stephen Cauley 2822
Published online 28 July 2026

Accelerated High-Resolution T_1-Weighted MRI Using Magnetization-Prepared Echo-Planar Imaging With Steady-State Echo Pathway Enhancement, Silu Han and Nan-kuei Chen 2831
Published online 29 July 2026

Free-Breathing Hepatic Oxygen Extraction Fraction (OEF) Mapping Using Radial GESSE, Ke Zhang, Simon M. F. Triphan, Felix T. Kurz, Congcong Fu, Na Zhang, Christian H. Ziener, Mark E. Ladd, Heinz-Peter Schlemmer, Hans-Ulrich Kauczor, and Oliver Sedlaczek 2840
Published online 07 August 2026

Incomplete Spoiling Correction for 3D T_1 Mapping, Gabriela Belsley, Damian J. Tyler, Matthew D. Robson, and Elizabeth M. Tunnicliffe 2848
Published online 13 August 2026

■ PRECLINICAL AND CLINICAL IMAGING

Research Article
Deep Learning Improves Robustness of Voxelwise Kinetic Modeling for Hyperpolarized Carbon-13 MRI, Kofi Deh, Yeona Kang, Tsang-Wei Tu, Rania Jones, Curtiland Deville, and Rao Khan 2857
Published online 05 August 2026

A Voxel-Wise T2 Distribution Framework for Lesion Severity Stratification and Treatment-Response Assessment in Stroke: Insights Into Suberoylanilide Hydroxamic Acid-Induced Neuroprotection, Andrea Díaz-Pérez, Clara Penas, Francesc Jiménez-Altayó, and Silvia Lope-Piedrafita 2870
Published online 06 August 2026

Multi-Vendor and Multi-Site Characterization of ^{13}C Coils for Clinical Studies, Emil S. Christensen, Andreas Clemmensen, Esben S. S. Hansen, Jonathan Birchall, Mary A. McLean, Christoffer Laustsen, Andreas Kjaer, and Thomas L. Andersen 2885
Published online 18 August 2026

■ BIOPHYSICS AND BASIC BIOMEDICAL RESEARCH

Research Article
Venous Oxygenation Measurements in the Upper Arm: Reproducibility and Sensitivity to a Physical Challenge, J. Diogo Fernandes, Koen P. A. Baas, Matthan W. A. Caan, Bart J. Biemond, John C. Wood, and Aart J. Nederveen 2894
Published online 02 September 2026

Technical Note
A Low-Cost, Microcontroller-Based Gas Delivery System for Respiratory Stimuli in MRI Studies, Nicholas P. Blockley, Ahlam A. Alzaidi, Colette C. Milbourn, Daniel P. Bulte, Andrew Rudgewick-Brown, and Sebastian W. Rieger 2907
Published online 13 August 2026

■ COMPUTER PROCESSING AND MODELING

Toolbox
ArteryX: A Reliable End-To-End Toolbox for Standardized Intracranial Artery Feature Extraction From 3D TOF-MRA, Abrar Faiyaz, Nhat Hoang, Giovanni Schifitto, and Md Nasir Uddin 2914
Published online 11 August 2026

15222594, 2026, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/mrm.70605 by Shannon Stepanian , Wiley Online Library on [20/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

CONTENTS

Research Article

Enhanced Glioblastoma Detection Through ^{13}C Hyperpolarized MRI and Two-Dimensional Statistics, Abdallah Salemdawod, Dirk Mayer, Abubakr Eldirdiri, Myounghee Lee, Alexander Ksendzovsky, Graeme F. Woodworth, Joshua C. Rogers, Nathan E. Crone, Piotr J. Franaszczuk, Miroslaw Janowski, and Anna Korzeniewska 2925
Published online 21 July 2026

Pixel-Wise Uncertainty Quantification of Accelerated MRI Reconstruction, Ilias I. Giannakopoulos, Lokesh B. Gautham Muthukumar, Yvonne W. Lui, and Riccardo Lattanzi 2937
Published online 26 July 2026

RECENet: A Dual-Stream Contrast-Aware Attention Network With Bidirectional Pyramid Consistency for CEST Image Registration, Yu Meng, Zhekai Chen, Yang Zhou, and Lin Chen..... 2950
Published online 31 July 2026

Placental Blood-Flow Velocity Quantification From Diffusion MRI, ZhuangJian Yang, Diana Cruz De Oliveira, Leevi Kerkelä, Marco Palombo, Elizabeth Powell, Christopher S. Parker, Daniel Cromb, Lisa Story, Serena J. Counsell, Kelly Payette, Joseph V. Hajnal, Jana Hutter, Rebecca J. Shipley, Daniel C. Alexander, and Paddy J. Slator 2967
Published online 11 August 2026

■ HARDWARE AND INSTRUMENTATION

3D Printing of Subject-Specific Passive Shims for In Vivo Small-Animal Magnetic Resonance Imaging, An Vanduffel, Cesar Parra-Cabrera, Hanne Vanduffel, Quentin Goudard, Kasia Błażejczyk, Shannon Helsper, Uwe Himmelreich, Dimitrios Sakellariou, and Rob Ameloot 2978
Published online 15 July 2026

Evaluation of 7 Tesla pTx Body Coils Regarding Transmit and Receive Performance, Johannes A. Grimm, Oliver Kraff, Markus W. May, Max Lutz, Stephan Orzada, Thomas M. Fiedler, Steen Moeller, Simon Schmidt, Harald H. Quick, Armin M. Nagel, Mark E. Ladd, and Sebastian Schmitter..... 2988
Published online 14 August 2026

Technical Note

A Flexible Graphite–Silicone Pad for Improved Fat Suppression in Cervical Spine MRI at 5 T via Passive B_0 Shimming, Yihan Yang, Ziyu Liu, Haotian Hong, Weijun Zhang, and Zhihua Ren 3002
Published online 27 July 2026

Optical Detuning Strategies for Shielded Loop Resonators, Jakob Gerlach, Reza Aghabagheri, Zining Liu, Shuai Liu, Morteza Teymoori, Çağlar Ataman, Michael Bock, and Ali Caglar Özen..... 3011
Published online 03 August 2026

■ ESR

Research Article

Advanced Inversion Recovery Single Point Imaging for High Spatial Resolution and Quantitative Oxygen Imaging, Boris Epel, Irene Canavesi, and Mrignayani Kotecha 3021
Published online 26 August 2026

■ ERRATA

Erratum to "Minimizing Electric Fields and Increasing Peripheral Nerve Stimulation Thresholds Using a Body Gradient Array Coil" 3033
Published online 01 September 2026

Correction to "Radial Multi-Echo bSSFP and IDEAL Chemical Shift Separation in k-Space for High-Speed 3D Hyperpolarized ^{13}C Metabolic MRI" 3034
Published online 14 August 2026

Information for Authors and Subscribers can now be found online at
http://onlinelibrary.wiley.com/r/mrmauthorguidelines

15222594, 2026, 6, Downloaded from https://onlinelibrary.wiley.com/doi/10.1002/mrm.70605 by Shannon Stepanian , Wiley Online Library on [20/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License