

MAGNETIC RESONANCE IN MEDICINE

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

CONTENTS

■ LETTER TO THE EDITOR

A do-it-yourself approach to waste-heat recovery in MRI, Rüdiger Brühl, Hannes Dillinger, Dirk Trepte, and Bernd Ittermann 1824
Published online 25 July 2025

■ SPECTROSCOPIC METHODOLOGY

Research Article

SMART MRS: A Simulated MEGA-PRESS ARTifacts toolbox for GABA-edited MRS, Hanna Bugler, Amirmohammad Shamaei, Roberto Souza, and Ashley D. Harris 1826
Published online 09 June 2025

Lipid-targeted echo-planar spectroscopic imaging technique for in vivo lipid composition measurement, Dingyi Lin, Jiaqiang Zhou, Xinyi Zhu, Yufan Zhou, Wenjing Zhang, Feng Chen, Mengye Lyu, Chunli Cai, Hong Zhang, and Min Wang 1840
Published online 10 June 2025

■ IMAGING METHODOLOGY

Research Article

Robust multi-coil MRI reconstruction via self-supervised denoising, Asad Aali, Marius Arvinte, Sidharth Kumar, Yamin I. Arefeen, and Jonathan I. Tamir 1859
Published online 02 June 2025

In vivo evaluation of population-specific inversion pulses in parallel transmission, Igor Tyshchenko, Simon Lévy, Joseph J. Bartlett, Bahman Tahayori, Yasmin Blunck, Tudor V. Sava, Kelvin Chow, Patrick Liebig, Rebecca Glarin, and Leigh A. Johnston 1878
Published online 05 June 2025

3D-printable phantoms for quantitative dynamic contrast-enhanced MRI, M. Sulaiman Sarwar, Antoine Vallatos, Cher Hon Lau, Adam Waldman, Simone Dimartino, and Michael J. Thrippleton 1889
Published online 16 June 2025

B₁-corrected breast T₁ mapping at ultralow field, Sheng Shen, Neha Koonjoo, Stephen E. Ogier, Thomas Boele, Mansi A. Saksena, Kathryn E. Keenan, and Matthew S. Rosen 1900
Published online 16 June 2025

Rapid, high-resolution and distortion-free R₂ mapping of fetal brain using multi-echo radial FLASH and model-based reconstruction, Xiaoqing Wang, Hongli Fan, Zhengguo Tan, Serge Vasylechko, Edward Yang, Ryne Didier, Onur Afacan, Martin Uecker, Simon K. Warfield, and Ali Gholipour 1913
Published online 19 June 2025

Quantitative abdominal sodium MRI combined with 32-channel proton pTx MRI at 7 Tesla in a large field-of-view, Anna K. Scheipers, Johannes A. Grimm, Jana Losch, Stephan Orzada, Thomas M. Fiedler, Armin M. Nagel, Sebastian Schmitter, Mark E. Ladd, and Tanja Platt 1930
Published online 22 June 2025

pTx-Pulseq in hybrid sequences: Accessible and advanced hybrid open-source MRI sequences on Philips scanners, Thomas H. M. Roos, Edwin Versteeg, Mark Gosselink, Hans Hoogduin, Kyung Min Nam, Nicolas Boulant, Vincent Gras, Franck Mauconduit, Dennis W. J. Klomp, Jeroen C. W. Siero, and Jannie P. Wijnen 1946
Published online 03 July 2025

Multidimensional RF pulse design using auto-differentiable spin-domain optimization and its application to reduced field-of-view imaging, Jiayao Yang, Jon-Fredrik Nielsen, Jeffrey A. Fessler, and Yun Jiang 1963
Published online 16 June 2025

Simultaneous 3D aortic lumen and vessel wall imaging at 0.55 T at either systole or diastole, Matias Paredes, Carlos Castillo-Passi, Karl P. Kunze, Anastasia Fotaki, Simon Littlewood, René M. Botnar, and Claudia Prieto 1982
Published online 23 June 2025

Detection of transient tissue displacement using wavelet MR elastography: Phantom validation and in vivo human brain repeatability study, Yuan Le, Xiang Shan, Kevin J. Glaser, Jun Chen, Phillip J. Rossman, Yi Sui, Armando Manduca, John Huston III, Richard L. Ehman, and Ziying Yin 1997
Published online 19 June 2025

CONTENTS

Easy-to-use B_1^+ shims for human brain imaging at 7 T, Emma J. P. Brouwer, Wietske van der Zwaag, Jurjen Heij, and Nikos Pervovoulos2010
Published online 24 June 2025

Quadruple-refocused spin-locking: A robust method for high-amplitude $T_{1\rho}$ imaging, Cai Wan, Maximilian Gram, Wei He, Zheng Xu, Qingping Chen, Sebastian Littin, Thomas Lange, and Maxim Zaitsev2023
Published online 28 June 2025

Myelin water and tensor-valued diffusion imaging: (How) are they related?, Sharada Balaji, Adam V. Dvorak, Neale Wiley, Erin L. MacMillan, Anthony Traboulsee, Irene M. Vavasour, Guillaume Gilbert, G. R. Wayne Moore, David K. B. Li, Cornelia Laule, Alex L. MacKay, and Shannon Kolind2038
Published online 02 July 2025

Development of an echo-shifted, multi-echo, gradient-echo sequence for T_2^* quantification of slow-relaxing water pools, Seonyeong Shin, Ana-Maria Oros-Peusquens, Seong Dae Yun, Ezequiel Farrher, and N. Jon Shah2057
Published online 05 July 2025

Impact of tissue sample preparation methods on myelin-sensitive quantitative MR imaging, Amaya Murguia, Scott D. Swanson, Ulrich Scheven, Andrea Jacobson, Jon-Fredrik Nielsen, Jeffrey A. Fessler, and Navid Seraji-Bozorgzad2071
Published online 25 July 2025

Modeling the effect of in-plane magnetic field gradients on asymmetric spin-echo images with echo-planar imaging readout, Philipp Wallimann, Patrick L. Y. Tang, Fatemeh Arzanforoosh, Stephanie Tanadini-Lang, Nicolaus Andratschke, Marion Smits, and Esther A. H. Warnert2086
Published online 17 July 2025

Cardiac diffusion kurtosis imaging in the human heart in vivo using 300 mT/m gradients, Maryam Afzali, Sam Coveney, Lars Mueller, Sarah Jones, Fabrizio Fasano, C. John Evans, Irvin Teh, Erica Dall'Armellina, Filip Szczepankiewicz, Derek K. Jones, and Jürgen E. Schneider2100
Published online 03 July 2025

Fast, motion-robust MR elastography with distributed, generalized encoding, Mary K. Kramer, Alex M. Cerjanic, and Curtis L. Johnson2113
Published online 10 July 2025

Technical Note
Cerebellar imaging for neuroscience at 9.4 T, W. van der Zwaag, D. H. Y. Tse, B. A. Poser, and N. Pervovoulos2129
Published online 28 June 2025

Exact analytical solutions of the Bloch equation for the hyperbolic-secant and chirp pulses, Ryan H. B. Smith, Donald Garwood, and Michael Garwood2140
Published online 16 June 2025

Fast and High-Resolution luminal water imaging for prostate cancer diagnosis, Hao Li, Nikita Sushentsev, Dimitri Kessler, Shaohang Li, Kang-Lung Lee, Andrew Nicholas Priest, Ferdia A. Gallagher, and Tristan Barrett2150
Published online 05 July 2025

■ PRECLINICAL AND CLINICAL IMAGING

Research Article
Oscillating gradient spin echo diffusion time effects implicate variations in neurite beading for the heterogeneous reduced diffusion in human acute ischemic stroke lesions, Mi Zhou, Rob Stobbe, Matthew Budde, Brian Buck, Mahesh Kate, Mar Lloret, Paige Fairall, Ken Butcher, Ashfaq Shuaib, Derek Emery, Thorsten Feiweier, and Christian Beaulieu2158
Published online 24 June 2025

Simultaneous liver T_1 , T_2 , and ADC MR fingerprinting using optimized motion-compensated diffusion preparations: An initial validation on volunteers, C. Velasco, C. Castillo-Passi, N. Chaher, D. C. Karampinos, P. Irarrazaval, A. Phinikaridou, R. M. Botnar, and C. Prieto2173
Published online 09 July 2025

Technical Note
Radial multi-echo bSSFP and IDEAL chemical shift separation in k-space for high-speed 3D hyperpolarized ^{13}C metabolic MRI, Zirun Wang, Martin Grashei, Johannes Fischer, Sandra Sühnel, Nadine Setzer, Marcel Awenius, Andreas Korzowski, Ali C. Özen, Maxim Zaitsev, Michael Bock, Franz Schilling, Andreas B. Schmidt, and Christoph A. Müller2190
Published online 28 July 2025

CONTENTS

■ COMPUTER PROCESSING AND MODELING

Research Article

- Dual-scan self-learning denoising for application in ultralow-field MRI,**
Yuxiang Zhang, Wei He, Jiamin Wu,
and Zheng Xu2201
Published online 18 June 2025

- MC-RED: A deep learning network for motion correction in 3D CEST imaging,**
Haibo Yang, Shengjie Zhang, Ziqi Yu,
and Xiao-Yong Zhang2216
Published online 11 June 2025

- Fast MR signal simulations of microvascular and diffusion contributions using histogram-based approximation and recurrent neural networks,**
Thomas Coudert, Maitê Silva Martins Marçal,
Aurélien Delphin, Antoine Barrier, Lila Cunge,
Loïc Legris, Jan M. Warnking, Benjamin Lemasson,
Emmanuel L. Barbier, and Thomas Christen2234
Published online 08 July 2025

Technical Note

- Correcting pulse duration effects in the diffusional kurtosis of the multi-compartment Kärger model,** Jens H. Jensen2249
Published online 10 June 2025

- Compressed sensing acceleration of radial 3-D alternating Look-Locker T_1 mapping,**
Antti Aarnio, Olli Nykänen, Ville Kolehmainen,
and Mikko J. Nissi2258
Published online 16 June 2025

■ HARDWARE AND INSTRUMENTATION

Research Article

- Strong gradients, cool performance: A 64-channel array coil with concurrent field monitoring and thermal control for ex vivo diffusion-weighted brain imaging using the 3T connectome 2.0 MRI scanner,**
Alina Müller, Mirsad Mahmutovic, Mona Alem,
Gabriel Ramos-Llordén, Dongsuk Sung,
Manisha Shrestha, Sam-Luca J.D. Hansen,
Chaimaa Chemlali, Anpreet Ghotra,
Jason Stockmann, Choukri Mekkaoui,
Lawrence L. Wald, Anastasia Yendiki,
Susie Y. Huang, and Boris Keil2268
Published online 09 June 2025

- High-density MRI coil arrays with integrated field monitoring systems for human connectome mapping,** Mirsad Mahmutovic,
Manisha Shrestha, Gabriel Ramos-Llordén,
Dongsuk Sung, Luke J. Edwards, Ying Chu,
Paul I. Dubovan, Alina Müller,
Sam-Luca J.D. Hansen, Anpreet Ghotra,
Kerrin J. Pine, Roland Müller, Nikolaus Weiskopf,
Lawrence L. Wald, Choukri Mekkaoui,
Harald E. Möller, Susie Y. Huang, and Boris Keil2286
Published online 19 June 2025

- Feasibility of strong diffusion encoding and fast readout using a plug-and-play head gradient insert at 7 T,** G. C. Arends,
E. Versteeg, A. De Luca, F. Marc, T. H. M. Roos,
D. W. J. Klomp, M. Froeling, J. C. W. Siero,
and C. M. W. Tax2304
Published online 02 July 2025