

CONTENTS

■ SPECTROSCOPIC METHODOLOGY

Full Paper

- High-Resolution Metabolic Mapping of the Cerebellum Using 2D Zoom Magnetic Resonance Spectroscopic Imaging,** Uzay E. Emir, Jaiyta Sood, Mark Chiew, Micheal Albert Thomas, and Sean P. Lane.....2349
Published online 7 December 2020

Notes

- Repeatability and Reliability of GABA Measurements with Magnetic Resonance Spectroscopy in Healthy Young Adults,** Jessica M. Duda, Amelia D. Moser, Chun S. Zuo, Fei Du, Xi Chen, Sarah Perlo, Christine E. Richards, Nara Nascimento, Maria Ironside, David J. Crowley, Laura M. Holsen, Madhusmita Misra, James I. Hudson, Jill M. Goldstein, and Diego A. Pizzagalli.....2359
Published online 20 November 2020

- Characterization and Correction of Center-Frequency Effects in X-Nuclear Eddy Current Compensations on a Clinical MR System,** Mary A. McLean, R. Scott Hinks, Joshua D. Kaggie, Ramona Woitek, Frank Riemer, Martin J. Graves, Dominick J. O. McIntyre, Ferdia A. Gallagher, and Rolf F. Schulte2370
Published online 4 December 2020

■ IMAGING METHODOLOGY

Review

- MR Elastography: Principles, Guidelines, and Terminology,** Armando Manduca, Philip J. Bayly, Richard L. Ehman, Arunark Kolipaka, Thomas J. Royston, Ingolf Sack, Ralph Sinkus, and Bernard E. Van Beers2377
Published online 9 December 2020

Rapid Communication

- Alternating Unbalanced SSFP for 3D R_2' Mapping of the Human Brain,** Hyunyeol Lee and Felix W. Wehrli2391
Published online 16 December 2020

Full Papers

- Pilot Tone-Based Motion Correction for Prospective Respiratory Compensated Cardiac Cine MRI,** Juliane Ludwig, Peter Speier, Frank Seifert, Tobias Schaeffter, and Christoph Kolbitsch2403
Published online 23 November 2020

- Diffusion-PEPTIDE: Distortion- and Blurring-Free Diffusion Imaging with Self-Navigated Motion-Correction and Relaxometry Capabilities,** Merlin J. Fair, Congyu Liao, Mary Kate Manhard, and Kawin Setsompop.....2417
Published online 12 December 2020

- Magnetic Resonance Imaging with Submillisecond Temporal Resolution,** Zheng Zhong, Kaibao Sun, M. Muge Karaman, and Xiaohong Joe Zhou.....2434
Published online 30 November 2020

- Deconvolution-Based Distortion Correction of EPI Using Analytic Single-Voxel Point-Spread Functions,** Franz Patzig, Toralf Mildner, Torsten Schlumm, Roland Muller, and Harald E. Moller.....2445
Published online 21 November 2020

- Improving FLAIR SAR Efficiency at 7T by Adaptive Tailoring of Adiabatic Pulse Power Through Deep Learning B_1^+ Estimation,** Shahrokh Abbasi-Rad, Kieran O'Brien, Samuel Kelly, Viktor Vegh, Anders Rodell, Yasvir Tesiram, Jin Jin, Markus Barth, and Steffen Bollmann2462
Published online 23 November 2020

- Unbalanced SSFP for Super-Resolution in MRI,** Peter J. Lally, Paul M. Matthews, and Neal K. Bangerter2477
Published online 17 November 2020

- Highly Accelerated Submillimeter Resolution 3D GRASE with Controlled T_2 Blurring in T_2 -Weighted Functional MRI at 7 Tesla: A Feasibility Study,** Suhyung Park, Salvatore Torrisi, Jennifer D. Townsend, Alexander Beckett, and David A. Feinberg2490
Published online 24 November 2020

- T-Hex: Tilted Hexagonal Grids for Rapid 3D Imaging,** Maria Engel, Lars Kasper, Bertram Wilm, Benjamin Dietrich, Laetitia Vionnet, Franciszek Hennel, Jonas Reber, and Klaas P. Pruessmann2507
Published online 3 December 2020

- Varying Diffusion Time to Discriminate Between Simulated Skeletal Muscle Injury Models Using Stimulated Echo Diffusion Tensor Imaging,** David B. Berry, Erin K. Englund, Vitaly Galinsky, Lawrence R. Frank, and Samuel R. Ward2524
Published online 23 November 2020

CONTENTS

Free-Water DTI Estimates from Single b-Value Data Might Seem Plausible But Must Be Interpreted with Care, Marc Golub, Rafael Neto Henriques, and Rita Gouveia Nunes.....2537
Published online 3 December 2020

3D Free-Breathing Multichannel Absolute B_1^+ Mapping in the Human Body at 7T, Sebastian Dietrich, Christoph S. Aigner, Christoph Kolbitsch, Johannes Mayer, Juliane Ludwig, Simon Schmidt, Tobias Schaeffter, and Sebastian Schmitter2552
Published online 7 December 2020

k-Space Domain Parallel Transmit Pulse Design, Jun Ma, Bernhard Gruber, Xinqiang Yan, and William A. Grissom2568
Published online 26 November 2020

Multi-Organ Comparison of Flow-Based Arterial Spin Labeling Techniques: Spatially Non-Selective Labeling for Cerebral and Renal Perfusion Imaging, Suzanne L. Franklin, Isabell K. Bones, Anita A. Hartevelde, Lydiane Hirschler, Marijn van Stralen, Qin Qin, Anneloes de Boer, Johannes M. Hoogduin, Clemens Bos, Matthias J. P. van Osch, and Sophie Schmid2580
Published online 30 November 2020

Accelerated Aortic 4D Flow MRI with Wave-CAIPI, Julian A. J. Richter, Tobias Wech, Andreas M. Weng, Manuel Stich, Ning Jin, Aleksander Kosmala, Thorsten A. Bley, and Herbert Köstler.....2595
Published online 24 November 2020

Free-Breathing R_2^* Mapping of Hepatic Iron Overload in Children Using 3D Multi-Echo UTE Cones MRI, Youngwook Kee, Christopher M. Sandino, Ali B. Syed, Joseph Y. Cheng, Ann Shimakawa, Timothy J. Colgan, Diego Hernandez, and Shreyas S. Vasanaawala2608
Published online 11 January 2021

Dissolved ^{129}Xe Lung MRI with Four-Echo 3D Radial Spectroscopic Imaging: Quantification of Regional Gas Transfer in Idiopathic Pulmonary Fibrosis, Guilhem J. Collier, James A. Eaden, Paul J. C. Hughes, Stephen M. Bianchi, Neil J. Stewart, Nicholas D. Weatherley, Graham Norquay, Rolf F. Schulte, and Jim M. Wild.....2622
Published online 30 November 2020

Free-Breathing Diffusion Tensor MRI of the Whole Left Ventricle Using Second-Order Motion Compensation and Multitasking Respiratory Motion Correction, Christopher T. Nguyen, Anthony G. Christodoulou, Jaume Coll-Font, Sen Ma, Yibin Xie, Timothy G. Reese, Choukri Mekkaoui, Gregory D. Lewis, Xiaoming Bi, David E. Sosnovik, and Debiao Li2634
Published online 30 November 2020

Combining T_2 Measurements and Crusher Gradients into a Single ASL Sequence for Comparison of the Measurement of Water Transport Across the Blood-Brain Barrier, Léonie Petitclerc, Sophie Schmid, Lydiane Hirschler, and Matthias J. P. van Osch.....2649
Published online 30 November 2020

A Fast Navigator (fastNAV) for Prospective Respiratory Motion Correction in First-Pass Myocardial Perfusion Imaging, Ronald Mooiweer, Radhouene Neji, Sarah McElroy, Muhummad Sohaib Nazir, Reza Razavi, Amedeo Chiribiri, and Sébastien Roujol.....2661
Published online 3 December 2020

Free-Breathing Radial Imaging Using a Pilot-Tone Radiofrequency Transmitter for Detection of Respiratory Motion, Eddy Solomon, David S. Rigie, Thomas Vahle, Jan Paška, Jan Bollenbeck, Daniel K. Sodickson, Fernando E. Boada, Kai Tobias Block, and Hersh Chandarana.....2672
Published online 11 December 2020

One-Minute Whole-Brain Magnetization Transfer Ratio Imaging with Intrinsic B_1 -Correction, Roya Afshari, Francesco Santini, Rahel Heule, Craig H. Meyer, Josef Pfeuffer, and Oliver Bieri2686
Published online 8 December 2020

Improved Reproducibility of Diffusion MRI of the Human Brain with a Four-Way Blip-Up and Down Phase-Encoding Acquisition Approach, M. Okan Irfanoglu, Neda Sadeghi, Joelle Sarlls, and Carlo Pierpaoli.....2696
Published online 16 December 2020

Measuring Pulmonary Gas Exchange Using Compartment-Selective Xenon-Polarization Transfer Contrast (XTC) MRI, Faraz Amzajerian, Kai Ruppert, Hooman Hamedani, Ryan Baron, Yi Xin, Luis Loza, Tahmina Achekzai, Ian F. Duncan, Yiwen Qian, Mehrdad Pourfathi, Stephen Kadlecsek, and Rahim R. Rizi2709
Published online 7 December 2020

Ensuring Both Velocity and Spatial Responses Robust to B_0/B_1^+ Field Inhomogeneities for Velocity-Selective Arterial Spin Labeling Through Dynamic Phase-Cycling, Dapeng Liu, Wenbo Li, Feng Xu, Dan Zhu, Taehoon Shin, and Qin Qin.....2723
Published online 8 December 2020

Semiautomatic Cerebrovascular Territory Mapping Based on Dynamic ASL MR Angiography Without Vessel-Encoded Labeling, Soroush Heidari Pahlavian, Oren Geri, Jonathan Russin, Samantha J. Ma, Arun Amar, Danny J. J. Wang, Dafna Ben Bashat, and Lirong Yan2735
Published online 21 December 2020

CONTENTS

Cardiac Real-Time MRI Using a Pre-Emphasized Spiral Acquisition Based on the Gradient System Transfer Function, Philipp Eirich, Tobias Wech, Julius F. Heidenreich, Manuel Stich, Nils Petri, Peter Nordbeck, Thorsten A. Bley, and Herbert Köstler2747
Published online 3 December 2020

Time-Efficient Measurement of Subtle Blood-Brain Barrier Leakage Using a T_1 Mapping MRI Protocol at 7 T, Marieke van den Kerkhof, Paulien H. M. Voorter, Lianne P. W. Canjels, Joost J. A. de Jong, Robert J. van Oostenbrugge, Abraham A. Kroon, Jacobus F. A. Jansen, and Walter H. Backes.....2761
Published online 8 December 2020

Notes

Balanced Spin-Lock Preparation for B_1 -Insensitive and B_0 -Insensitive Quantification of the Rotating Frame Relaxation Time $T_{1\rho}$, Maximilian Gram, Michael Seethaler, Daniel Gensler, Johannes Oberberger, Peter M. Jakob, and Peter Nordbeck2771
Published online 9 November 2020

Fast Automatic Segmentation of Thalamic Nuclei from MP2RAGE Acquisition at 7 Tesla, Ritobrato Datta, Micky K. Bacchus, Dushyant Kumar, Mark A. Elliott, Aditya Rao, Sudipto Dolui, Ravinder Reddy, Brenda L. Banwell, and Manojkumar Saranathan2781
Published online 3 December 2020

■ PRECLINICAL AND CLINICAL IMAGING

Full Papers

Delayed Urea Differential Enhancement CEST (dudeCEST)-MRI with T_1 Correction for Monitoring Renal Urea Handling, Soo Hyun Shin, Michael F. Wendland, and Moriel H. Vandsburger ... 2791
Published online 12 November 2020

Evaluation of Hepatic Steatosis Before Liver Transplantation in Ex Vivo by Volumetric Quantitative PDFF-MRI, Gen Chen, Jipin Jiang, Xinqiang Wang, Min Yang, Yalong Xie, Hui Guo, Hao Tang, Lifan Zhou, Daoyu Hu, Ihab R. Kamel, Zhishui Chen, and Zhen Li2805
Published online 16 November 2020

■ BIOPHYSICS AND BASIC BIOMEDICAL RESEARCH

Note

Toward Nonparametric Diffusion- T_1 Characterization of Crossing Fibers in the Human Brain, Alexis Reymbaut, Jeffrey Critchley, Giuliana Durighel, Tim Sprenger, Michael Sughrue, Karin Bryskhe, and Daniel Topgaard2815
Published online 10 December 2020

■ COMPUTER PROCESSING AND MODELING

Full Papers

Robust Water-Fat Separation Based on Deep Learning Model Exploring Multi-Echo Nature of mGRE, Kewen Liu, Xiaojun Li, Zhao Li, Yalei Chen, Hongxia Xiong, Fang Chen, Qinjia Bao, and Chaoyang Liu2828
Published online 24 November 2020

Cine and Late Gadolinium Enhancement MRI Registration and Automated Myocardial Infarct Heterogeneity Quantification, Fumin Guo, Philippa R. P. Krahn, Terenz Escartin, Idan Roifman, and Graham Wright.....2842
Published online 23 November 2020

Transceive Phase Corrected 2D Contrast Source Inversion-Electrical Properties Tomography, Peter R. S. Stijnman, Stefano Mandija, Patrick S. Fuchs, Cornelis A. T. van den Berg, and Rob F. Remis2856
Published online 6 December 2020

Apparent Propagator Anisotropy from Single-Shell Diffusion MRI Acquisitions, Santiago Aja-Fernández, Antonio Tristán-Vega, and Derek K. Jones.....2869
Published online 13 December 2020

■ HARDWARE AND INSTRUMENTATION

Rapid Communication

Elastomer Coils for Wearable MR Detection, Andreas Port, Roger Luechinger, David O. Brunner, and Klaas P. Pruessmann2882
Published online 12 January 2021

Full Papers

Efficient Eddy Current Characterization Using a 2D Image-Based Sampling Scheme and a Model-Based Fitting Approach, Michael Schwerter, Markus Zimmermann, Jörg Felder, and N. Jon Shah.....2892
Published online 17 November 2020

Real-Time Device Tracking Under MRI Using an Acousto-Optic Active Marker, Yusuf S. Yaras, Dursun Korel Yildirim, Daniel A. Herzka, Toby Rogers, Adrienne E. Campbell-Washburn, Robert J. Lederman, F. Levent Degertekin, and Ozgur Kocaturk.....2904
Published online 21 December 2020

■ ESR

Compact Electron Spin Resonance Skin Oximeter: Properties and Initial Clinical Results, David Cristea, Helen Wolfson, Rizwan Ahmad, Ygal Twig, Periannan Kuppusamy, and Aharon Blank.....2915
Published online 18 November 2020