

CONTENTS

■ SPECTROSCOPIC METHODOLOGY

Full Papers

Dephasing Optimization through Coherence Order Pathway Selection (DOTCOPS) for Improved Crusher Schemes in MR Spectroscopy, Karl Landheer and Christoph Juchem2209
Published online 3 November 2018

Retrospective Artifact Elimination in MEGA-PRESS Using a Correlation Approach, Sofie Tapper, Anders Tisell, Gunther Helms, and Peter Lundberg.....2223
Published online 12 November 2018

■ IMAGING METHODOLOGY

Rapid Communication

Magnetocaloric Materials as Switchable High Contrast Ratio MRI Labels, Mladen Barbic, Stephen J. Dodd, H. Douglas Morris, Neil Dilley, Barbara Marcheschi, Alan Huston, Tim D. Harris, and Alan P. Koretsky2238
Published online 25 November 2018

Full Papers

Accelerated Imaging of Metallic Implants Using Model-Based Nonlinear Reconstruction, Xinwei Shi, Evan Levine, Hans Weber, and Brian A. Hargreaves.....2247
Published online 4 December 2018

Evaluation of Magnetohydrodynamic Effects in Magnetic Resonance Electrical Impedance Tomography at Ultra-High Magnetic Fields, Atul S. Minhas, Munish Chauhan, Fanrui Fu, and Rosalind Sadleir2264
Published online 19 November 2018

Silent T_2^* and T_2 Encoding Using ZTE Combined with BURST, Rolf F. Schulte, Guido Buonincontri, Mauro Costagli, Anne Menini, Florian Wiesinger, and Ana Beatriz Solana2277
Published online 2 November 2018

Towards a 'Resolution Limit' for DW-MRI Tumor Microstructural Models: A Simulation Study Investigating the Feasibility of Distinguishing Between Microstructural Changes, Damien J. McHugh, Penny L. Hubbard Cristinacce, Josephine H. Naish, and Geoffrey J. M. Parker2288
Published online 19 October 2018

Quantitative 3D Dynamic Contrast-Enhanced (DCE) MR Imaging of Carotid Vessel Wall by Fast T1 Mapping Using Multitasking, Nan Wang, Anthony G. Christodoulou, Yibin Xie, Zhenjia Wang, Zixin Deng, Bill Zhou, Sangeun Lee, Zhaoyang Fan, Hyukjae Chang, Wei Yu, and Debiao Li.....2302
Published online 28 October 2018

A New Approach to Z-Spectrum Acquisition: Prospective Baseline Enhancement (PROBE) for CEST/Nuclear Overhauser Effect, Tobias Lenich, André Pampel, Toralf Mildner, and Harald E. Möller.....2315
Published online 26 October 2018

Accurate Fatty Acid Composition Estimation of Adipose Tissue in the Abdomen based on Bipolar Multi-Echo MRI, Manuel Schneider, Gemini Janas, Felix Lugauer, Elisabeth Hoppe, Dominik Nickel, Brian M. Dale, Berthold Kiefer, Andreas Maier, and Mustafa R. Bashir2330
Published online 28 October 2018

Magnetic Resonance Field Fingerprinting, Gregor Körzdörfer, Yun Jiang, Peter Speier, Jianing Pang, Dan Ma, Josef Pfeuffer, Bernhard Hensel, Vikas Gulani, Mark Griswold, and Mathias Nittka2347
Published online 15 October 2018

Mapping of Regional Lung Microstructural Parameters Using Hyperpolarized ^{129}Xe Dissolved-Phase MRI in Healthy Volunteers and Patients with Chronic Obstructive Pulmonary Disease, Agilo L. Kern, Marcel Gutberlet, Andreas Voskrebenzev, Filip Klimeš, Alexander Rotärmel, Frank Wacker, Jens M. Hohlfeld, and Jens Vogel-Claussen.....2360
Published online 26 October 2018

Multishot Diffusion-Prepared Magnitude-Stabilized Balanced Steady-State Free Precession Sequence for Distortion-Free Diffusion Imaging, Yu Gao, Fei Han, Ziwu Zhou, Xiaodong Zhong, Xiaoming Bi, John Neylon, Anand Santhanam, Yingli Yang, and Peng Hu.....2374
Published online 28 November 2018

Multi-Echo MR Thermometry Using Iterative Separation of Baseline Water and Fat Images, Megan E. Poorman, Ieva Braškutė, Lambertus W. Bartels, and William A. Grissom2385
Published online 5 November 2018

CONTENTS

Simultaneous NODDI and GFA Parameter Map Generation from Subsampled q-Space Imaging Using Deep Learning, Eric K. Gibbons, Kyler K. Hodgson, Akshay S. Chaudhari, Lorie G. Richards, Jennifer J. Majersik, Ganesh Adluru, and Edward V.R. DiBella2399
Published online 13 November 2018

3D Gradient Echo Snapshot CEST MRI with Low Power Saturation for Human Studies at 3T, Anagha Deshmane, Moritz Zaiss, Tobias Lindig, Kai Herz, Mark Schuppert, Chirayu Gandhi, Benjamin Bender, Ulrike Ernemann, and Klaus Scheffler2412
Published online 15 November 2018

A Method to Correct Background Phase Offset for Phase-Contrast MRI in the Presence of Steady Flow and Spatial Wrap-Around Artifact, Aaron A. Pruitt, Ning Jin, Yingmin Liu, Orlando P. Simonetti, and Rizwan Ahmad2424
Published online 15 November 2018

Influence of Background Suppression and Retrospective Realignment on Free-Breathing Renal Perfusion Measurement Using Pseudo-Continuous ASL, Manuel Taso, Arnaud Guidon, and David C. Alsop2439
Published online 25 November 2018

Free-Breathing, Non-ECG, Continuous Myocardial T₁ Mapping with Cardiovascular Magnetic Resonance Multitasking, Jaime L. Shaw, Qi Yang, Zhengwei Zhou, Zixin Deng, Christopher Nguyen, Debiao Li, and Anthony G. Christodoulou2450
Published online 19 November 2018

UTE-SENCEFUL: First Results for 3D High-Resolution Lung Ventilation Imaging, L. Mendes Pereira, T. Wech, A.M. Weng, C. Kestler, S. Veldhoen, T.A. Bley, and H. Köstler2464
Published online 4 November 2018

A General Framework for Optimizing Arterial Spin Labeling MRI Experiments, Joseph G. Woods, Michael A. Chappell, and Thomas W. Okell2474
Published online 26 December 2018

T₁, T₂ Contrast, and Ernst-Angle Images of Four Rat-Lung Pathologies, Dean O. Kuethe, Jeremy M. Hix, and Laura E. Fredenburgh2489
Published online 12 November 2018

Correction of B₀ Eddy Current Effects in Spiral MRI, Ryan K. Robison, Zhiqiang Li, Dinghui Wang, Melvyn B. Ooi, and James G. Pipe2501
Published online 16 November 2018

Fast and Sensitive Dynamic Oxygen-Enhanced MRI with a Cycling Gas Challenge and Independent Component Analysis, Firas Moosvi, Jennifer H.E. Baker, Andrew Yung, Piotr Kozlowski, Andrew I. Minchinton, and Stefan A. Reinsberg2514
Published online 28 October 2018

The BOLD Sensitivity of Rapid Steady-State Sequences, Klaus Scheffler, Rahel Heule, Mario G. Báez-Yáñez, Bernd Kardatzki, and Gabriele Lohmann2526
Published online 29 November 2018

Flow MR Fingerprinting, Sebastian Flassbeck, Simon Schmidt, Peter Bachert, Mark E. Ladd, and Sebastian Schmitter2536
Published online 2 December 2018

Cartesian MR Fingerprinting in the Eye at 7T Using Compressed Sensing and Matrix Completion-Based Reconstructions, Kirsten Koolstra, Jan-Willem Maria Beenakker, Peter Koken, Andrew Webb, and Peter Börner2551
Published online 13 November 2018

Optimization of Phase-Contrast MRI for the Estimation of Global Cerebral Blood Flow of Mice at 11.7T, Zhiliang Wei, Lin Chen, Zixuan Lin, Dengrong Jiang, Jiadi Xu, Peiying Liu, Peter C.M. van Zijl, and Hanzhang Lu2566
Published online 4 November 2018

Simultaneous Multi-Slice Cardiac Cine with Fourier-Encoded Self-Calibration at 7 Tesla, Stanislas Rapacchi, Thomas Troalen, Zakarya Bentatou, Morgane Quemeneur, Maxime Guye, Monique Bernard, Alexis Jacquier, and Frank Kober2576
Published online 19 November 2018

One-Millimeter Isotropic Breast Diffusion-Weighted Imaging: Evaluation of a Superresolution Strategy in Terms of Signal-to-Noise Ratio, Sharpness and Apparent Diffusion Coefficient, Maya Delbany, Aurélien Bustin, Julie Pujol, Isabelle Thomassin-Naggara, Jacques Felblinger, Pierre-André Vuissoz, and Freddy Odille2588
Published online 10 December 2018

Real-Time Simultaneous Shim and Motion Measurement and Correction in GlycoCEST MRI Using Double Volumetric Navigators (DvNavs), Gizeaddis L. Simegn, Andre J.W. Van der Kouwe, Frances C. Robertson, Ernesta M. Meintjes, and Ali Alhamud2600
Published online 2 December 2018

CONTENTS

Notes

Simultaneous Estimation of PD, T_1 , T_2 , T_2^* , and ΔB_0 Using Magnetic Resonance Fingerprinting with Background Gradient Compensation, Taehwa Hong, Dongyeob Han, and Dong-Hyun Kim.....2614
Published online 13 November 2018

Nyquist Ghost Correction of Breast Diffusion Weighted Imaging Using Referenceless Methods, Jessica A. McKay, Steen Moeller, Lei Zhang, Edward J. Auerbach, Michael T. Nelson, and Patrick J. Bolan2624
Published online 2 November 2018

Accelerated, First-Pass Cardiac Perfusion Pulse Sequence with Radial k-Space Sampling, Compressed Sensing, and k-Space Weighted Image Contrast Reconstruction Tailored for Visual Analysis and Quantification of Myocardial Blood Flow, Nivedita K. Naresh, Hassan Haji-Valizadeh, Pascale J. Aouad, Matthew J. Barrett, Kelvin Chow, Ann B. Ragin, Jeremy D. Collins, James C. Carr, Daniel C. Lee, and Daniel Kim.....2632
Published online 12 November 2018

Integrated Motion Correction and Dictionary Learning for Free-Breathing Myocardial T_1 Mapping, Yanjie Zhu, Jinkyu Kang, Chong Duan, Maryam Nezafat, Ulf Neisius, Jihye Jang, and Reza Nezafat.....2644
Published online 27 November 2018

■ PRECLINICAL AND CLINICAL IMAGING

Full Papers

Hyperpolarized [$1\text{-}^{13}\text{C}$]pyruvate MRI Can Image the Metabolic Shift in Cardiac Metabolism Between the Fasted and Fed State in a Porcine Model, Rasmus Stilling Tougaard, Esben Søvsø Szocska Hansen, Christoffer Laustsen, Thomas Stokholm Nørlinger, Emmeli Mikkelsen, Jakob Lindhardt, Per Mose Nielsen, Lotte Bonde Bertelsen, Marie Schroeder, Hans Erik Bøtker, Won Yong Kim, Henrik Wiggers, and Hans Stødkilde-Jørgensen.....2655
Published online 2 November 2018

Noninvasive Quantification of Oxygen Saturation in the Portal and Hepatic Veins in Healthy Mice and those with Colorectal Liver Metastases Using QSM MRI, Eoin Finnerty, Rajiv Ramasawmy, James O'Callaghan, John J. Connell, Mark Lythgoe, Karin Shmueli, David L. Thomas, and Simon Walker-Samuel.....2666
Published online 19 November 2018

Fast Tomoelastography of the Mouse Brain by Multifrequency Single-Shot MR Elastography, Gergely Bertalan, Jing Guo, Heiko Tzschätzsch, Charlotte Klein, Eric Barnhill, Ingolf Sack, and Jürgen Braun.....2676
Published online 4 November 2018

The Choice of Embedding Media Affects Image Quality, Tissue R_2^* , and Susceptibility Behaviors in Post-Mortem Brain MR Microscopy at 7.0T, Petr Dusek, Vince Istvan Madai, Till Huelnhagen, Erik Bahn, Radoslav Matej, Jan Sobesky, Thoralf Niendorf, Julio Acosta-Cabronero, and Jens Wuerfel.....2688
Published online 2 December 2018

Notes

Translation of Carbon-13 EPI for Hyperpolarized MR Molecular Imaging of Prostate and Brain Cancer Patients, Jeremy W. Gordon, Hsin-Yu Chen, Adam Autry, Ilwoo Park, Mark Van Criekinge, Daniele Mammoli, Eugene Milshteyn, Robert Bok, Duan Xu, Yan Li, Rahul Aggarwal, Susan Chang, James B. Slater, Marcus Ferrone, Sarah Nelson, John Kurhanewicz, Peder E.Z. Larson, and Daniel B. Vigneron.....2702
Published online 30 October 2018

Direct Radiofrequency Saturation Corrected Amide Proton Transfer Tumor MRI at 3T, Yin Wu, Yinsheng Chen, Yiyi Zhao, Shasha Yang, Jing Zhao, Jian Zhou, Zhongping Chen, Phillip Zhe Sun, and Hairong Zheng.....2710
Published online 3 November 2018

Whole Brain Measurements of the Positive BOLD Response Variability During a Finger Tapping Task at 7 T Show Regional Differences in its Profiles, Yohan Boillat and Wietske van der Zwaag2720
Published online 15 October 2018

Noninvasive Quantification of Fibrosis in Skeletal and Cardiac Muscle in *mdx* Mice Using EP3533 Enhanced Magnetic Resonance Imaging, Alexander Peter Murphy, Elizabeth Greally, Dara O'Hogain, Andrew Blamire, Peter Caravan, and Volker Straub.....2728
Published online 5 November 2018

■ COMPUTER PROCESSING AND MODELING

Full Papers

Fully Convolutional Networks for Automated Segmentation of Abdominal Adipose Tissue Depots in Multicenter Water-Fat MRI, Taro Langner, Anders Hedström, Katharina Mörwald, Daniel Weghuber, Anders Forslund, Peter Bergsten, Håkan Ahlström, and Joel Kullberg.....2736
Published online 12 October 2018

Disentangling the Effects of High Permittivity Materials on Signal Optimization and Sample Noise Reduction via Ideal Current Patterns, Manushka V. Vaidya, Daniel K. Sodickson, Christopher M. Collins, and Riccardo Lattanzi.....2746
Published online 13 November 2018

CONTENTS

Novel Insights into In-Vivo Diffusion Tensor Cardiovascular Magnetic Resonance Using Computational Modeling and a Histology-Based Virtual Microstructure, Jan N. Rose, Sonia Nielles-Vallespin, Pedro F. Ferreira, David N. Firmin, Andrew D. Scott, and Denis J. Doorly2759
Published online 23 October 2018

Evaluating Corrections for Eddy-Currents and Other EPI Distortions in Diffusion MRI: Methodology and a Dataset for Benchmarking, M. Okan Irfanoglu, Joelle Sarlls, Amritha Nayak, and Carlo Pierpaoli.....2774
Published online 5 November 2018

Assessment of Cardiac-Driven Liver Movements with Filtered Harmonic Phase Image Representation, Optical Flow Quantification, and Motion Amplification, Stephan Hahn, Julie Absil, Olivier Debeir, and Thierry Metens2788
Published online 28 November 2018

Note
Echo Time-Range Effects on Gradient-Echo Based Myelin Water Fraction Mapping at 3T, Hongpyo Lee, Yoonho Nam, and Dong-Hyun Kim2799
Published online 22 October 2018

■ HARDWARE AND INSTRUMENTATION

Full Paper
IMPULSE: A Scalable Algorithm for Design of Minimum Specific Absorption Rate Parallel Transmit RF Pulses, Mihir Pendse, Riccardo Stara, Mohammad Mehdi Khalighi, and Brian Rutt2808
Published online 13 November 2018