

CONTENTS

■ SPECTROSCOPIC METHODOLOGY

Full Papers

- Three-Dimensional Accelerated Acquisition for Hyperpolarized ^{13}C MR with Blipped Stack-of-Spirals and Conjugate-Gradient SENSE,** Rie B. Olin, Juan Diego Sánchez-Heredia, Rolf F. Schulte, Nikolaj Bøgh, Esben Søvsø Szocska Hansen, Christoffer Laustsen, Lars G. Hanson, and Jan H. Ardenkjær-Larsen 519
Published online 20 January 2020

- New Insight into the Organization of Myelin Water Using Deuterium NMR,** Uzi Eliav, Felix W. Wehrli, and Gil Navon 535
Published online 21 January 2020

- T_2 Relaxation Times of Macromolecules and Metabolites in the Human Brain at 9.4 T,** Saipavitra Murali-Manohar, Tamas Borbath, Andrew Martin Wright, Brian Soher, Ralf Mekle, and Anke Henning 542
Published online 31 January 2020

Note

- Reconstruction of Spectra from Truncated Free Induction Decays by Deep Learning in Proton Magnetic Resonance Spectroscopy,** Hyochul Lee, Hyeong Hun Lee, and Hyeonjin Kim 559
Published online 8 January 2020

■ PRECLINICAL AND CLINICAL SPECTROSCOPY

Full Paper

- Quantitative Evaluation of Lung Injury Caused by $\text{PM}_{2.5}$ Using Hyperpolarized Gas Magnetic Resonance,** Ming Zhang, Haidong Li, Hongchuan Li, Xiuchao Zhao, Qian Zhou, Qiuchen Rao, Yeqing Han, Yina Lan, He Deng, Xianping Sun, Xin Lou, Chaohui Ye, and Xin Zhou 569
Published online 23 December 2019

■ IMAGING METHODOLOGY

Full Papers

- Submillimeter MR Fingerprinting Using Deep Learning-Based Tissue Quantification,** Zhenghan Fang, Yong Chen, Sheng-Che Hung, Xiaoxia Zhang, Weili Lin, and Dinggang Shen 579
Published online 19 December 2019

- Performance of Compressed Sensing for Fluorine-19 Magnetic Resonance Imaging at Low Signal-to-Noise Ratio Conditions,** Ludger Starke, Andreas Pohlmann, Christian Prinz, Thoralf Niendorf, and Sonia Waiczies 592
Published online 20 December 2019

- Phase-Based T_2 Mapping with Gradient Echo Imaging,** Xiaoke Wang, Diego Hernando, and Scott B. Reeder 609
Published online 24 December 2019

- Assessment and Correction of Macroscopic Field Variations in 2D Spoiled Gradient-Echo Sequences,** Martin Soellradl, Andreas Lesch, Johannes Strasser, Lukas Pirpamer, Rudolf Stollberger, Stefan Ropele, and Christian Langkammer 620
Published online 23 December 2019

- T_1 Measurement of Bound Water in Cortical Bone Using 3D Adiabatic Inversion Recovery Ultrashort Echo Time (3D IR-UTE) Cones Imaging,** Tan Guo, Yajun Ma, Saeed Jerban, Hyungseok Jang, Wei Zhao, Eric Y. Chang, Min Chen, Graeme M. Bydder, and Jiang Du 634
Published online 20 December 2019

- Water-Fat Separation in Spiral Magnetic Resonance Fingerprinting for High Temporal Resolution Tissue Relaxation Time Quantification in Muscle,** Kirsten Koolstra, Andrew G. Webb, Thom T. J. Veeger, Hermien E. Kan, Peter Koken, and Peter Börner 646
Published online 3 January 2020

- A Transfer-Learning Approach for Accelerated MRI Using Deep Neural Networks,** Salman UI Hassan Dar, Muzaffer Özbey, Ahmet Burak Çatlı, and Tolga Çukur 663
Published online 3 January 2020

- Simultaneous MRI Water-Fat Separation and Quantitative Susceptibility Mapping of Carotid Artery Plaque Pre- and Post-Ultrasmall Superparamagnetic Iron Oxide-Uptake,** Pascal P. R. Ruetten, Alison D. Cluroe, Ammara Usman, Andrew N. Priest, Jonathan H. Gillard, and Martin J. Graves 686
Published online 21 January 2020

CONTENTS

Oscillating Steady-State Imaging (OSSI): A Novel Method for Functional MRI,

Shouchang Guo and Douglas C. Noll 698
Published online 8 January 2020

Motion-Corrected MRI with DISORDER: Distributed and Incoherent Sample Orders for Reconstruction Deblurring Using Encoding Redundancy,

Lucilio Cordero-Grande, Giulio Ferrazzi, Rui Pedro A. G. Teixeira, Jonathan O'Muircheartaigh, Anthony N. Price, and Joseph V. Hajnal 713
Published online 3 January 2020

Improved MR Fingerprinting for Relaxation Measurement in the Presence of Semisolid Magnetization Transfer,

Yuguang Meng, Jesse Cheung, and Phillip Zhe Sun 727
Published online 3 January 2020

Single-Shot EPI for ASL-CMR,

Ahsan Javed and Krishna S. Nayak 738
Published online 14 February 2020

Echo-Planar Imaging of the Human Head with 100 mT/m Gradients and High-Order Modeling of Eddy Current Fields,

Franciszek Hennel, Bertram Wilm, Manuela B. Roesler, Markus Weiger, Benjamin Dietrich, and Klaas P. Pruessmann 751
Published online 21 January 2020

Fast Submillimeter Diffusion MRI Using gSlider-SMS and SNR-Enhancing Joint Reconstruction,

Justin P. Haldar, Yunsong Liu, Congyu Liao, Qiuyun Fan, and Kawin Setsompop 762
Published online 10 January 2020

Improving PCASL at Ultra-High Field Using a VERSE-Guided Parallel Transmission Strategy,

Yan Tong, Peter Jezzard, Thomas W. Okell, and William T. Clarke 777
Published online 23 January 2020

Center-Out EPI (COEPI): A Fast Single-Shot Imaging Technique with a Short TE,

Xudong Chen, Ante Zhu, and Yiping P. Du 787
Published online 3 February 2020

Reconstruction of Undersampled 3D Non-Cartesian Image-Based Navigators for Coronary MRA Using an Unrolled Deep Learning Model,

Mario O. Malavé, Corey A. Baron, Srivathsan P. Koundinyan, Christopher M. Sandino, Frank Ong, Joseph Y. Cheng, and Dwight G. Nishimura 800
Published online 3 February 2020

Silent T₁ Mapping Using the Variable Flip Angle Method with B₁ Correction,

Emil Ljungberg, Tobias Wood, Ana Beatriz Solana, Shannon Kolind, Steven C. R. Williams, Florian Wiesinger, and Gareth J. Barker 813
Published online 21 January 2020

Feasibility of a Sub-3-Minute Imaging Strategy for Ungated Quiescent Interval Slice-Selective MRA of the Extracranial Carotid Arteries Using Radial k-Space Sampling and Deep Learning-Based Image Processing,

Ioannis Koktzoglou, Rong Huang, Archie L. Ong, Pascale J. Aouad, Emily A. Aherne, and Robert R. Edelman 825
Published online 23 January 2020

Notes

Improved Real-Time Tagged MRI Using REALTAG,

Weiyi Chen, Nam Gyun Lee, Dani Byrd, Shrikanth Narayanan, and Krishna S. Nayak 838
Published online 24 December 2019

Generalized Simultaneous Multi-Orientation 2D Imaging,

Nikolai J. Mickevicius, Andrew S. Nencka, and Eric S. Paulson 847
Published online 24 December 2019

Magnetization Transfer and Frequency Distribution Effects in the SSFP Ellipse,

Tobias C. Wood, Rui P. A. G. Teixeira, and Shaihan J. Malik 857
Published online 24 December 2019

Controlled Aliasing for Improved Parallel Imaging with a 3D Spiral Staircase Trajectory,

Ashley G. Anderson III, Dinghui Wang, and James G. Pipe 866
Published online 22 January 2020

Modeling an Equivalent b-value in Diffusion-Weighted Steady-State Free Precession,

Benjamin C. Tendler, Sean Foxley, Michiel Cottaar, Saad Jbabdi, and Karla L. Miller 873
Published online 10 January 2020

Intravoxel B₀ Inhomogeneity Corrected Reconstruction Using a Low-Rank Encoding Operator,

Fan Lam and Bradley P. Sutton 885
Published online 5 February 2020

PRECLINICAL AND CLINICAL IMAGING

Full papers

Dynamic T₂ Mapping by Multi-Spin-Echo Spatiotemporal Encoding,

Qingjia Bao, Lingceng Ma, Gilad Liberman, Eddy Solomon, Ricardo P. Martinho, and Lucio Frydman 895
Published online 20 January 2020

Characterization Complex Collagen Fiber Architecture in Knee Joint Using High-Resolution Diffusion Imaging,

Nian Wang, Anthony J. Mirando, Gary Cofer, Yi Qi, Matthew J. Hilton, and G. Allan Johnson 908
Published online 21 January 2020

CONTENTS

Characterization of R_2^* and Tissue Density in the Human Lung: Application to Neonatal Imaging in the Intensive Care Unit, Andrew D. Hahn, Annelise Malkus, Jeffery Kammerman, Nara Higano, Laura Walkup, Jason Woods, and Sean B. Fain920
Published online 19 December 2019

Six-Dimensional Quantitative DCE MR Multitasking of the Entire Abdomen: Method and Application to Pancreatic Ductal Adenocarcinoma, Nan Wang, Srinivas Gaddam, Lixia Wang, Yibin Xie, Zhaoyang Fan, Wensha Yang, Richard Tuli, Simon Lo, Andrew Hendifar, Stephen Pandol, Anthony G. Christodoulou, and Debiao Li.....928
Published online 21 January 2020

Note

Detection of Acute Kidney Injury with Hyperpolarized [^{13}C , ^{15}N]Urea and Multiexponential Relaxation Modeling, James T. Grist, Christian Østergaard Mariager, Haiyun Qi, Per Mose Nielsen, and Christoffer Laustsen943
Published online 15 December 2019

■ BIOPHYSICS AND BASIC BIOMEDICAL RESEARCH

Full Paper

Oscillating Diffusion-Encoding with a High Gradient-Amplitude and High Slew-Rate Head-Only Gradient for Human Brain Imaging, Ek T. Tan, Robert Y. Shih, Jhimli Mitra, Tim Sprenger, Yihe Hua, Chitresh Bhushan, Matt A. Bernstein, Jennifer A. McNab, J. Kevin DeMarco, Vincent B. Ho, and Thomas K. F. Foo950
Published online 3 February 2020

■ COMPUTER PROCESSING AND MODELING

Full Papers

JEDI: Joint Estimation Diffusion Imaging of Macroscopic and Microscopic Tissue Properties, Lawrence R. Frank, Benjamin Zahneisen, and Vitaly L. Galinsky966
Published online 9 January 2020

Coupled Transfer Function Model for the Evaluation of Implanted Cables Safety in MRI, Julie Kabil, Jacques Felblinger, Pierre-André Vuissoz, and Alexia Missoffe991
Published online 20 January 2020

Correcting Time-Intensity Curves in Dynamic Contrast-Enhanced Breast MRI for Inhomogeneous Excitation Fields at 7T, Michael J. van Rijssel, Josien P. W. Pluim, Hui-Shan M. Chan, Lieke van den Wildenberg, Alexander M. Th. Schmitz, Peter R. Luijten, Kenneth G. A. Gilhuijs, and Dennis W. J. Klomp1000
Published online 27 December 2019

Modeling the Diffusion-Weighted Imaging Signal for Breast Lesions in the $b = 200$ to 3000 s/mm^2 Range: Quality of Fit and Classification Accuracy for Different Representations, Igor Vidić, Liv Egnell, Neil P. Jerome, Nathan S. White, Roshan Karunamuni, Rebecca Rakow-Penner, Anders M. Dale, Tone F. Bathen, and Pål Erik Goa.....1011
Published online 23 January 2020

Deep Learning-Based MR Fingerprinting ASL ReconSTRUCTION (DeepMARS), Qiang Zhang, Pan Su, Zhensen Chen, Ying Liao, Shuo Chen, Rui Guo, Haikun Qi, Xuesong Li, Xue Zhang, Zhangxuan Hu, Hanzhang Lu, and Huijun Chen.....1024
Published online 4 February 2020

■ HARDWARE AND INSTRUMENTATION

Full Papers

Thermo-Acoustic Ultrasound for Noninvasive Temperature Monitoring at Lead Tips During MRI, Neerav Dixit, John M. Pauly, and Greig C. Scott.....1035
Published online 27 December 2019

MR Safety Watchdog for Active Catheters: Wireless Impedance Control with Real-Time Feedback, Ali Caglar Özen, Berk Silemek, Thomas Lottner, Ergin Atalar, and Michael Bock1048
Published online 21 January 2020

Evaluation of RF Interactions Between a 3T Birdcage Transmit Coil and Transcranial Magnetic Stimulation Coils Using a Realistically Shaped Head Phantom, Lucia I. Navarro de Lara, Laleh Golestanirad, Sergey N. Makarov, Jason P. Stockmann, Lawrence L. Wald, and Aapo Nummenmaa1061
Published online 23 January 2020

Double-Tuned $^{31}\text{P}/^1\text{H}$ Human Head Array with High Performance at Both Frequencies for Spectroscopic Imaging at 9.4T, Nikolai I. Avdievich, Loreen Ruhm, Johanna Dorst, Klaus Scheffler, Andreas Korzowski, and Anke Henning1076
Published online 30 January 2020

■ CORRIGENDUM

Published online 1 April 2020