

CONTENTS

■ SPECTROSCOPIC METHODOLOGY

Full Paper

- Regional Investigation of Lung Function and Microstructure Parameters by Localized ^{129}Xe Chemical Shift Saturation Recovery and Dissolved-Phase Imaging: A Reproducibility Study,** Agilo Luitger Kern, Marcel Gutberlet, Kun Qing, Andreas Voskrebenez, Filip Klimeš, Till Frederik Kaireit, Christoph Czerner, Heike Biller, Frank Wacker, Kai Ruppert, Jens M. Hohfeld, and Jens Vogel-Claussen..... 13
Published online 9 September 2018

■ IMAGING METHODOLOGY

Review

- Magnetic Resonance Fingerprinting: A Technical Review,** Bhairav Bipin Mehta, Simone Coppo, Debra Frances McGivney, Jesse Ian Hamilton, Yong Chen, Yun Jiang, Dan Ma, Nicole Seiberlich, Vikas Gulani, and Mark Alan Griswold 25
Published online 14 September 2018

Rapid Communications

- GlucocEST Imaging with on-Resonance Variable Delay Multiple Pulse (onVDMP) MRI,** Xiang Xu, Jiadi Xu, Kannie W.Y. Chan, Jing Liu, Huanling Liu, Yuguo Li, Lin Chen, Guanshu Liu, and Peter C.M. van Zijl 47
Published online 29 July 2018

- Looping Star,** Florian Wiesinger, Anne Menini, and Ana Beatriz Solana 57
Published online 14 August 2018

- Creatine and Phosphocreatine Mapping of Mouse Skeletal Muscle by a Polynomial and Lorentzian Line-Shape Fitting Cest Method,** Lin Chen, Peter B. Barker, Robert G. Weiss, Peter C. M. van Zijl, and Jiadi Xu 69
Published online 23 September 2018

Full Papers

- The Effects of Variations in Tissue Microstructure from Postmortem Rat Brain on the Asymmetry of the Water Proton Resonance,** Sean Foxley, Gregory S Karczmar, and Kazutaka Takahashi 79
Published online 16 July 2018

- Golden Ratio Stack of Spirals for Flexible Angiographic Imaging: Proof of Concept in Congenital Heart Disease,** Grzegorz Tomasz Kowalik, Jennifer Anne Steeden, David Atkinson, Javier Montalt-Tordera, Kristian Havmand Mortensen, and Vivek Muthurangu 90
Published online 25 May 2018

- Five-Minute Whole-Heart Coronary MRA with Sub-Millimeter Isotropic Resolution, 100% Respiratory Scan Efficiency, and 3D-Prost Reconstruction,** Aurélien Bustin, Giulia Ginami, Gastão Cruz, Teresa Correia, Tevfik F. Ismail, Imran Rashid, Radhouene Neji, René M. Botnar, and Claudia Prieto 102
Published online 29 July 2018

- Assessment of the Generalization of Learned Image Reconstruction and the Potential for Transfer Learning,** Florian Knoll, Kerstin Hammernik, Erich Kobler, Thomas Pock, Michael P Recht, and Daniel K Sodickson 116
Published online 17 May 2018

- Gradient-Controlled Local Larmor Adjustment (GC-LOLA) for Simultaneous Multislice bSSFP Imaging with Improved Banding Behavior,** Daniel Stäb and Peter Speier 129
Published online 29 July 2018

- Rapid Dynamic Contrast-Enhanced MRI for Small Animals at 7T Using 3D Ultra-Short Echo Time and Golden-Angle Radial Sparse Parallel MRI,** Jin Zhang, Li Feng, Ricardo Otazo, and Sungheon Gene Kim 140
Published online 29 July 2018

- Black Blood Myocardial T_2 Mapping,** Chengyan Wang, Jihye Jang, Ulf Neisius, Maryam Nezafat, Ahmed Fahmy, Jinkyu Kang, Jennifer Rodriguez, Beth Goddu, Patrick Pierce, Sophie Berg, Jue Zhang, Xiaoying Wang, and Reza Nezafat 153
Published online 29 July 2018

- Stimulated Echo Based Mapping (STEM) of T_1 , T_2 , and Apparent Diffusion Coefficient: Validation and Protocol Optimization,** Yuxin Zhang, Shane A. Wells, and Diego Hernando 167
Published online 19 July 2018

CONTENTS

Combined Angiography and Perfusion Using Radial Imaging and Arterial Spin Labeling, Thomas W. Okell 182
Published online 19 July 2018

Motion Compensation using Principal Component Analysis and Projection onto Dipole Fields for Abdominal Magnetic Resonance Thermometry, Jeremy Tan, Charles Mougnot, Samuel Pichardo, James M. Drake, and Adam C. Waspe 195
Published online 29 July 2018

Toward More Reliable Measurements of NOE Effects in CEST Spectra at around -1.6 ppm (NOE (-1.6)) in Rat Brain, Zhongliang Zu 208
Published online 29 July 2018

Accelerated and High-Resolution Cardiac T_2 Mapping through Peripheral k-Space Sharing, Emeline Darçot, Jérôme Yerly, Roberto Colotti, Pier Giorgio Masci, Jerome Chaptinel, Helene Feliciano, Veronica Bianchi, and Ruud B. van Heeswijk 220
Published online 29 July 2018

Dynamic Off-Resonance Correction for Spiral Real-Time MRI of Speech, Yongwan Lim, Sajan Goud Lingala, Shrikanth S. Narayanan, and Krishna S. Nayak 234
Published online 29 July 2018

Effect of k-Space-Weighted Image Contrast and Ultrasound Focus Size on the Accuracy of Proton Resonance Frequency Thermometry, Bryant T. Svedin, Christopher R. Dillon, and Dennis L. Parker 247
Published online 29 July 2018

Head Motion Measurement and Correction Using FID navigators, Tess E. Wallace, Onur Afacan, Maryna Waszak, Tobias Kober, and Simon K. Warfield 258
Published online 29 July 2018

Cest Imaging at 9.4 T using Adjusted Adiabatic Spin-Lock Pulses For on- and off-Resonant $T1\rho$ -Dominated Z-Spectrum Acquisition, Kai Herz, Chirayu Gandhi, Mark Schuppert, Anagha Deshmane, Klaus Scheffler, and Moritz Zaiss 275
Published online 8 September 2018

Precision and Accuracy of Cross-Sectional Area Measurements Used to Measure Coronary Endothelial Function with Spiral MRI, Michael Schär, Sahar Soleimanifard, Gabriele Bonanno, Jérôme Yerly, Allison G. Hays, and Robert G. Weiss 291
Published online 19 July 2018

Relaxometry and Quantification in Simultaneously acquired Single and Triple Quantum Filtered Sodium MRI, Wieland A. Worthoff, Aliaksandra Shymanskaya, and N. Jon Shah 303
Published online 29 July 2018

Influences of Experimental Parameters on Chemical Exchange Saturation Transfer (CEST) Metrics of Brain Tumors using Animal Models at 4.7T, Hye-Young Heo, Yi Zhang, Shanshan Jiang, and Jinyuan Zhou 316
Published online 19 August 2018

Visualization of Cerebrospinal Fluid Dynamics using Multi-Spin Echo Acquisition Cine Imaging (MUSACI), Tatsuhiro Wada, Chiaki Tokunaga, Osamu Togao, Ryohei Funatsu, Yasuo Yamashita, Kouji Kobayashi, Masami Yoneyama, and Hiroshi Honda 331
Published online 8 September 2018

Dictionary-based Electric Properties Tomography, Nils Hampe, Max Herrmann, Thomas Amthor, Christian Findekle, Mariya Doneva, and Ulrich Katscher 342
Published online 23 September 2018

Separating Fetal and Maternal Placenta Circulations Using Multiparametric MRI, Andrew Melbourne, Rosalind Aughwane, Magdalena Sokolska, David Owen, Giles Kendall, Dimitra Flouri, Alan Bainbridge, David Atkinson, Jan Deprest, Tom Vercauteren, Anna David, and Sebastien Ourselin 350
Published online 21 September 2018

Multiband RF Pulse Design for Realistic Gradient Performance, Samy Abo Seada, Anthony N. Price, Torben Schneider, Joseph V. Hajnal, and Shaihan J. Malik 362
Published online 14 September 2018

Tilted-CAIPI for Highly Accelerated Distortion-Free EPI with Point Spread Function (PSF) Encoding, Zijing Dong, Fuyixue Wang, Timothy G. Reese, Mary Katherine Manhard, Berkin Bilgic, Lawrence L. Wald, Hua Guo, and Kawin Setsompop 377
Published online 5 September 2018

Mapping Electrical Properties Heterogeneity of Tumor using Boundary Informed Electrical Properties Tomography (BIEPT) at 7T, Yicun Wang, Qi Shao, Pierre-Francois Van de Moortele, Emilian Racila, Jiaen Liu, John Bischof, and Bin He 393
Published online 19 September 2018

CONTENTS

Optimization of the Spatial Modulation Function of Vessel-Encoded Pseudo-Continuous Arterial Spin Labeling and its Application to Dynamic Angiography,

Yuriko Suzuki, Matthias J. P. van Osch, Noriyuki Fujima, and Thomas W. Okell..... 410
Published online 19 September 2018

A Simplified Framework to Optimize MRI Contrast Preparation,

Eric Van Reeth, H el ene Ratiney, Kevin Tse Ve Koon, Michael Tesch, Denis Grenier, Olivier Beuf, Steffen J. Glaser, and Dominique Sugny 424
Published online 28 September 2018

Scan-Specific Robust Artificial-Neural-Networks For k-Space Interpolation (RAKI) Reconstruction: Database-Free Deep Learning for Fast Imaging,

Mehmet Ak acakaya, Steen Moeller, Sebastian Weing artner, and K amil U urbil 439
Published online 18 September 2018

Establishing Intra- and Inter-Vendor Reproducibility of T₁ Relaxation Time Measurements with 3T MRI,

Yoojin Lee, Martina F. Callaghan, Julio Acosta-Cabrero, Antoine Lutti, and Zoltan Nagy 454
Published online 29 August 2018

Notes

Evaluating the Accuracy of Multicomponent T₂ Parameters for Luminal Water Imaging of the Prostate with Acceleration Using Inner-Volume 3D Grase,

Rachel W. Chan, Angus Z. Lau, Garry Detzler, Vivekanandan Thayalasuthan, Robert K. Nam, and Masoom A. Haider..... 466
Published online 29 July 2018

Optimizing Maternal Fat Suppression with Constrained Image-Based Shimming in Fetal MR,

Andreia S. Gaspar, Rita G. Nunes, Giulio Ferrazzi, Emer J. Hughes, Jana Hutter, Shaihan J. Malik, Laura McCabe, Kelly P. Baruteau, Mary A. Rutherford, Joseph V. Hajnal, and Anthony N. Price 477
Published online 29 July 2018

Imaging Sequence for Joint Myocardial T₁ Mapping and Fat/Water Separation,

Maryam Nezafat, Shiro Nakamori, Tamer A. Basha, Ahmed S. Fahmy, Thomas Hauser, and Ren e M. Botnar 486
Published online 29 July 2018

Independent Validation of Metric Optimized Gating for Fetal Cardiovascular Phase-Contrast Flow Imaging,

Sebastian Bidhult, Johannes T oger, Einar Heiberg, Marcus Carlsson, H akan Arheden, Anthony H. Aletras, and Erik Hedstr om..... 495
Published online 29 August 2018

Accelerating Chemical Exchange Saturation Transfer MRI with Parallel Blind Compressed Sensing,

Huajun She, Joshua S. Greer, Shu Zhang, Bian Li, Jochen Keupp, Ananth J. Madhuranthakam, Ivan E. Dimitrov, Robert E. Lenkinski, and Elena Vinogradov 504
Published online 26 August 2018

On the Limitations of Partial Fourier Acquisition in Phase-Contrast MRI of Turbulent Kinetic Energy,

Jonas Walheim, Alexander Gotschy, and Sebastian Kozerke 514
Published online 28 September 2018

Accelerated, Free-Breathing, Noncontrast, Electrocardiograph-Triggered, Thoracic MR Angiography with Stack-of-Stars k-Space Sampling and GRASP Reconstruction,

Hassan Haji-Valizadeh, Jeremy D. Collins, Pascale J. Aouad, Ali M. Serhal, Marc D. Lindley, Jianing Pang, Nivedita K. Naresh, James C. Carr, and Daniel Kim 524
Published online 5 September 2018

In Vivo Microscopic Diffusional Kurtosis Imaging with Symmetrized Double Diffusion Encoding EPI,

Yang Ji, Jeffrey Paulsen, Iris Yuwen Zhou, Dongshuang Lu, Patrick Machado, Bensheng Qiu, Yi-Qiao Song, and Phillip Zhe Sun 533
Published online 9 September 2018

Pancreatic Perfusion and Arterial-Transit-Time Quantification using Pseudocontinuous Arterial Spin Labeling at 3T,

Manuel Taso, Arnaud Guidon, Li Zhao, Koenraad J. Mortelet, and David C. Alsop..... 542
Published online 5 September 2018

Compressed-Sensing MP2RAGE Sequence: Application to the Detection of Brain Metastases in Mice at 7T,

Aur elien J. Trotier, Stanislas Rapacchi, Thibaut L. Faller, Sylvain Miraux, and Emeline J. Ribot 551
Published online 9 September 2018

PRECLINICAL AND CLINICAL IMAGING

Full Papers

Neurovascular Stent Artifacts in 3D-TOF and 3D-PCMRI: Influence of Stent Design on Flow Measurement,

Pierre Bouillot, Olivier Brina, B en edict e M. A. Delattre, Rafik Ouared, Alain Pellaton, Hasan Yilmaz, Paolo Machi, Karl-Olof Lovblad, Mohamed Farhat, Vitor Mendes Pereira, and Maria Isabel Vargas..... 560
Published online 12 June 2018

Assessment of Frequency Drift on CEST MRI and Dynamic Correction: Application to gagCEST at 7T,

Johannes Windschuh, Moritz Zaiss, Philipp Ehse, Jae-Seung Lee, Alexej Jerschow, and Ravinder R. Regatte 573
Published online 31 May 2018

CONTENTS

Image Acquisition for Intravoxel Incoherent Motion Imaging of Kidneys Should be Triggered at the Instant of Maximum Blood Velocity: Evidence Obtained with Simulations and In Vivo Experiments, Bastien Milani, Jean-Baptiste Ledoux, David C. Rotzinger, Michiko Kanemitsu, Jean-Paul Vallée, Michel Burnier, and Menno Pruijm.....583
Published online 26 August 2018

Note

Machine Learning Improves Classification of Preclinical Models of Pancreatic Cancer with Chemical Exchange Saturation Transfer MRI, Joshua M. Goldenberg, Julio Cárdenas-Rodríguez, and Mark D. Pagel.....594
Published online 17 September 2018

■ BIOPHYSICS AND BASIC BIOMEDICAL RESEARCH

Full Papers

Functional Magnetic Resonance Electrical Impedance Tomography (fMREIT) Sensitivity Analysis using an Active Bidomain Finite-Element Model of Neural Tissue, Rosalind J. Sadleir, Fanrui Fu, and Munish Chauhan602
Published online 16 May 2018

Adaptive SAR Mass-Averaging Framework to Improve Predictions of Local RF Heating Near a Hip Implant for Parallel Transmit at 7 T, Aurelien Destruel, Kieran O'Brien, Jin Jin, Feng Liu, Markus Barth, and Stuart Crozier.....615
Published online 29 July 2018

White Matter Intercompartmental Water Exchange Rates Determined from Detailed Modeling of the Myelin Sheath, Peter van Gelderen and Jeff H Duyn.....628
Published online 19 September 2018

Notes

Sources of Hepatic Glycogen Synthesis in Mice Fed with Glucose or Fructose as the Sole Dietary Carbohydrate, Ivana Jarak, Cristina Barosa, Fatima O. Martins, Joao C. P. Silva, Cristiano Santos, Getachew Debas Belew, Joao Rito, Ivan Viegas, Jose Teixeira, Paulo J. Oliveira, and John G. Jones639
Published online 29 July 2018

Determination of Multipool Contributions to Endogenous Amide Proton Transfer Effects in Global Ischemia with High Spectral Resolution in vivo Chemical Exchange Saturation Transfer MRI, Iris Yuwen Zhou, Dongshuang Lu, Yang Ji, Limin Wu, Enfeng Wang, Jerry S. Cheung, Xiao-An Zhang, and Phillip Zhe Sun645
Published online 29 July 2018

■ COMPUTER PROCESSING AND MODELING

Full Papers

Changes in the Specific Absorption Rate (SAR) of Radiofrequency Energy in Patients with Retained Cardiac Leads During MRI at 1.5T and 3T, Laleh Golestanirad, Amir Ali Rahsepar, John E Kirsch, Kenichiro Suwa, Jeremy C. Collins, Leonardo M. Angelone, Boris Keil, Rod S. Passman, Giorgio Bonmassar, Peter Serano, Peter Krenz, Jim DeLap, James C. Carr, and Lawrence L. Wald653
Published online 12 June 2018

Accelerating Compressed Sensing in Parallel Imaging Reconstructions Using an Efficient Circulant Preconditioner for Cartesian Trajectories, Kirsten Koolstra, Jeroen van Gemert, Peter Börnert, Andrew Webb, and Rob Remis670
Published online 7 August 2018

Prediction of Peripheral Nerve Stimulation Thresholds of MRI Gradient Coils Using Coupled Electromagnetic and Neurodynamic Simulations, Mathias Davids, Bastien Guérin, Axel vom Endt, Lothar R. Schad, and Lawrence L. Wald.....686
Published online 9 August 2018

Notes

Multi-Echo GRE-Based Conductivity Imaging Using Kalman Phase Estimation Method, Kanghyun Ryu, Jaewook Shin, Hongpyo Lee, Jun-Hyeong Kim, and Dong-Hyun Kim.....702
Published online 29 July 2018

SNR-Weighted Regularization of ADC Estimates from Double-Echo in Steady-State (DESS), Bragi Sveinsson, Garry E. Gold, Brian A. Hargreaves, and Daehyun Yoon711
Published online 19 August 2018

■ HARDWARE AND INSTRUMENTATION

Full Paper

Comparison of Prospective Head Motion Correction with NMR Field Probes and an Optical Tracking System, Martin Eschelbach, Ali Aghaeifar, Jonas Bause, Jonas Handwerker, Jens Anders, Eva-Maria Engel, Axel Thielscher, and Klaus Scheffler719
Published online 29 July 2018