

## CONTENTS

### ■ SPECTROSCOPIC METHODOLOGY

#### Full Papers

**Noninvasive Detection of Pulmonary Tissue Destruction in a Mouse Model of Emphysema Using Hyperpolarized  $^{129}\text{Xe}$  MRS Under Spontaneous Respiration**, Hirohiko Imai, Atsuumi Kimura, Satoshi Iguchi, Yuki Hori, Shoko Masuda, and Hideaki Fujiwara..... 929  
*Published online 25 August 2010*

**Diffusion-Weighted Spectroscopy: A Novel Approach to Determine Macromolecule Resonances in Short-Echo Time  $^1\text{H}$ -MRS**, N. Kunz, C. Cudalbu, V. Mlynarik, P. S. Hüppi, S. V. Sizonenko, and R. Gruetter ..... 939  
*Published online 17 June 2010*

**Echo Planar Correlated Spectroscopic Imaging: Implementation and Pilot Evaluation in Human Calf In Vivo**, Scott Lipnick, Gaurav Verma, Saadallah Ramadan, Jon Furuyama, and M. Albert Thomas..... 947  
*Published online 22 June 2010*

**Ongoing Dual-Angle Measurements for the Correction of Partial Saturation in  $^{31}\text{P}$  MR Spectroscopy**, Damian J. Tyler, Orlando Lopez, Mark A. Cole, Carolyn A. Carr, Daniel J. Stuckey, Edward Lakatta, Kieran Clarke, and Richard G. Spencer..... 957  
*Published online 25 August 2010*

### ■ BIOPHYSICS & BASIC BIOMEDICAL RESEARCH

#### Full Paper

**Dependence of Blood  $R_2$  Relaxivity on CPMG Echo-Spacing at 2.35 and 7 T**, Alexander G. Gardener, Susan T. Francis, Malcolm Prior, Andrew Peters, and Penny A. Gowland ..... 967  
*Published online 16 August 2010*

### ■ IMAGING METHODOLOGY

#### Full Papers

**Modified Pulsed Continuous Arterial Spin Labeling for Labeling of a Single Artery**, Weiyang Dai, Philip M. Robson, Ajit Shankaranarayanan, and David C. Alsop ..... 975  
*Published online 27 July 2010*

**MRI Contrast From Relaxation Along a Fictitious Field (RAFF)**, Timo Liimatainen, Dennis J. Sorce, Robert O'Connell, Michael Garwood, and Shalom Michaeli ..... 983  
*Published online 25 August 2010*

**Contrast-Enhanced In Vivo Magnetic Resonance Microscopy of the Mouse Brain Enabled by Noninvasive Opening of the Blood-Brain Barrier With Ultrasound**, Gabriel P. Howles, Kristin F. Bing, Yi Qi, Stephen J. Rosenzweig, Kathryn R. Nightingale, and G. Allan Johnson ..... 995  
*Published online 25 August 2010*

**Transverse Relaxometry with Stimulated Echo Compensation**, R. Marc Lebel and Alan H. Wilman ..... 1005  
*Published online 17 June 2010*

**A Fully Automatic and Highly Efficient Navigator Gating Technique for High-Resolution Free-Breathing Acquisitions: Continuously Adaptive Windowing Strategy**, P. Jhooti, J. Keegan, and D. N. Firmin ..... 1015  
*Published online 30 June 2010*

**Positive Contrast Imaging of Iron Oxide Nanoparticles With Susceptibility-Weighted Imaging**, Frank Eibofner, Günter Steidle, Rainer Kehlbach, Rüdiger Bantleon, and Fritz Schick ..... 1027  
*Published online 17 June 2010*

**Simulation of Phase Contrast MRI of Turbulent Flow**, Sven Petersson, Petter Dyverfeldt, Roland Gårdhagen, Matts Karlsson, and Tino Ebbers ..... 1039  
*Published online 22 June 2010*

**Correcting Eddy Current and Motion Effects by Affine Whole-Brain Registrations: Evaluation of Three-Dimensional Distortions and Comparison with Slicewise Correction**, Siawoosh Mohammadi, Harald E. Möller, Harald Kugel, Dirk K. Möller, and Michael Deppe ..... 1047  
*Published online 22 June 2010*

**A Robust Methodology for In Vivo  $T_1$  Mapping**, Joëlle K. Barral, Erik Gudmundson, Nikola Stikov, Maryam Etezadi-Amoli, Petre Stoica, and Dwight G. Nishimura ..... 1057  
*Published online 17 June 2010*

**Reweighted  $\ell_1$  Referenceless PRF Shift Thermometry**, William A. Grissom, Michael Lustig, Andrew B. Holbrook, Viola Rieke, John M. Pauly, and Kim Butts-Pauly ..... 1068  
*Published online 17 June 2010*

# CONTENTS

**A Rapid and Robust Numerical Algorithm for Sensitivity Encoding with Sparsity Constraints: Self-Feeding Sparse SENSE**, Feng Huang, Yunmei Chen, Wotao Yin, Wei Lin, Xiaojing Ye, Weihong Guo, and Arne Reykowski..... 1078  
*Published online 17 June 2010*

**Imaging Three-Dimensional Myocardial Mechanics Using Navigator-Gated Volumetric Spiral Cine DENSE MRI**, Xiaodong Zhong, Bruce S. Spottiswoode, Craig H. Meyer, Christopher M. Kramer, and Frederick H. Epstein 1089  
*Published online 22 June 2010*

**Tailoring the Flow Sensitivity of Fast Spin-Echo Sequences for Noncontrast Peripheral MR Angiography**, Pippa Storey, Iliyana P. Atanasova, Ruth P. Lim, Jian Xu, Daniel Kim, Qun Chen, and Vivian S. Lee ..... 1098  
*Published online 19 August 2010*

## Notes

**Accurate, Localized Quantification of White Matter Perfusion With Single-Voxel ASL**, Rolf Pohmann ..... 1109  
*Published online 9 June 2010*

**Compressed Sensing Reconstruction for Magnetic Resonance Parameter Mapping**, Mariya Doneva, Peter Börnert, Holger Eggers, Christian Stehning, Julien S  n  gas, and Alfred Mertins ..... 1114  
*Published online 17 June 2010*

**Application of K-Space Energy Spectrum Analysis for Inherent and Dynamic  $B_0$  Mapping and Deblurring in Spiral Imaging**, Trong-Kha Truong, Nan-kuei Chen, and Allen W. Song..... 1121  
*Published online 17 June 2010*

**Highly Efficient Square Wave Distant Dipolar Field and Its Application for In Vivo MRI**, Congbo Cai, Fenglian Gao, Shuhui Cai, Jianhui Zhong, and Zhong Chen..... 1128  
*Published online 28 June 2010*

**Compressed Sensing MRI with Multichannel Data Using Multicore Processors**, Ching-Hua Chang and Jim Ji..... 1135  
*Published online 17 June 2010*

**In Vivo Venous Blood  $T_1$  Measurement Using Inversion Recovery True-FISP in Children and Adults**, Wen-Chau Wu, Varsha Jain, Cheng Li, Mariel Giannetta, Hallam Hurt, Felix W. Wehrli, and Danny J. J. Wang..... 1140  
*Published online 17 June 2010*

**Free-Breathing Myocardial Perfusion MRI Using SW-CG-HYPR and Motion Correction**, Lan Ge, Aya Kino, Mark Griswold, James C. Carr, and Debiao Li ..... 1148  
*Published online 17 June 2010*

**Clinical Prostate  $T_2$  Quantification Using Magnetization-Prepared Spiral Imaging**, Warren D. Foltz, Supriya Chopra, Peter Chung, Andrew Bayley, Charles Catton, David Jaffray, Graham A. Wright, Masoom A. Haider, and Cynthia M  nard ..... 1155  
*Published online 17 June 2010*

**Improving Temporal Resolution of Pulmonary Perfusion Imaging in Rats Using the Partially Separable Functions Model**, Cornelius Brinegar, Sarah S. Schmitter, Nilesh N. Mistry, G. Allan Johnson, and Zhi-Pei Liang..... 1162  
*Published online 17 June 2010*

## ■ PRECLINICAL AND CLINICAL IMAGING

### Full Papers

**Max CAPR: High-Resolution 3D Contrast-Enhanced MR Angiography With Acquisition Times Under 5 Seconds**, Clifton R. Haider, Eric A. Borisch, James F. Glockner, Petrice M. Mostardi, Phillip J. Rossman, Phillip M. Young, and Stephen J. Riederer ..... 1171  
*Published online 16 August 2010*

**Reproducibility of Diffusion Tensor Imaging in Human Forearm Muscles at 3.0 T in a Clinical Setting**, Martijn Froeling, Jos Oudeman, Sandra van den Berg, Klaas Nicolay, Mario Maas, Gustav J. Strijkers, Maarten R. Drost, and Aart J. Nederveen ..... 1182  
*Published online 19 August 2010*

**Simultaneous fMRI and Local Field Potential Measurements During Epileptic Seizures in Medetomidine-Sedated Rats Using RASER Pulse Sequence**, Antti M. Airaksinen, Juha-Pekka Niskanen, Ryan Chamberlain, Joanna K. Huttunen, Jari Nissinen, Michael Garwood, Asla Pitk  nen, and Olli Gr  hn ..... 1191  
*Published online 19 August 2010*

**$T_1$  Assessment of Hip Joint Cartilage Following Intra-Articular Gadolinium Injection: A Pilot Study**, Bernd Bittersohl, Harish S. Hosalkar, Young-Jo Kim, Stefan Werlen, Siegfried Trattnig, Klaus A. Siebenrock, and Tallal C. Mamisch ..... 1200  
*Published online 28 June 2010*

### Note

**Combination of Multidimensional Navigator Echoes Data from Multielement RF Coil**, Junmin Liu and Maria Drangova ..... 1208  
*Published online 17 June 2010*

## ■ COMPUTER PROCESSING AND MODELING

### Full Papers

**A Graph-Based Approach for Automatic Cardiac Tractography**, Carole Frindel, Marc Robini, Jo  l Schaerer, Pierre Croisille, and Yue-Min Zhu.. 1215  
*Published online 27 July 2010*

**Support Vector Machines in DSC-Based Glioma Imaging: Suggestions for Optimal Characterization**, Frank G. Z  llner, Kyrre E. Emblem, and Lothar R. Schad..... 1230  
*Published online 17 June 2010*