

Announcement

1015 ISMRM Young Investigator Award Winners

CME Article

1018 MRI Anatomy and Pathology of the Anal Canal

David B. Erlichman, Devaraju Kanmaniraja, Mariya Kobi, and Victoria Chernyak

Review Articles

1033 Proton MR Spectroscopy in the Breast: Technical Innovations and Clinical Applications

Reza Fardanesh, Maria Adele Marino, Daly Avendano, Doris Leithner, Katja Pinker, and Sunitha B. Thakur

1047 Techniques for Minimizing Sedation in Pediatric MRI

Su-Zhen Dong, Ming Zhu, and Dorothy Bulas

Original Research

Vascular

1055 Semiautomatic Carotid Intraplaque Hemorrhage Volume Measurement Using 3D Carotid MRI

Jin Liu, Jie Sun, Niranjana Balu, Marina S. Ferguson, Jinnan Wang, William S. Kerwin, Daniel S. Hippe, Amy Wang, Thomas S. Hatsukami, and Chun Yuan

1063 Automatic Image Processing Pipeline for Tracking Longitudinal Vessel Changes in Magnetic Resonance Angiography

Chih-Yang Hsu, Yimei Li, Yuanyuan Han, Lucas Elijovich, Noah D. Sabin, Tarek Abuelem, Radmehr Torabi, Austin Faught, Chia-Ho Hua, Paul Klimo, Thomas E. Merchant, and John T. Lucas Jr

Abdomen

1075 Multiparameter Diffusion-Weighted Imaging for Characterizing Pathological Patterns in Lupus Nephritis Patients: A Preliminary Study

Shan Zhang, Yanwei Lin, Xin Ge, Guiqin Liu, Jianjian Zhang, Shuaishuai Xu, Guangyu Wu, Sheng Chen, Jianrong Xu, and Shiteng Suo

1085 T_{1ρ} Mapping for Assessment of Renal Allograft Fibrosis

Stefanie J. Hectors, Octavia Bane, Paul Kennedy, Fadi El Salem, Madhav Menon, Maxwell Segall, Rafael Khaim, Veronica Delaney, Sara Lewis, and Bachir Taouli

1092 Pilot Study on Longitudinal Change in Pancreatic Proton Density Fat Fraction During a Weight-Loss Surgery Program in Adults With Obesity

Yesenia Covarrubias, Kathryn J. Fowler, Adrija Mamidipalli, Gavin Hamilton, Tanya Wolfson, Olof Dahlqvist Leinhard, Garth Jacobsen, Santiago Horgan, Jeffrey B. Schwimmer, Scott B. Reeder, and Claude B. Sirlin

1103 ²³Na MRI Depicts Early Changes in Ion Homeostasis in Skeletal Muscle Tissue of Patients With Duchenne Muscular Dystrophy

Teresa Gerhalter, Lena V. Gast, Benjamin Marty, Jan Martin, Regina Trollmann, Stephanie Schüssler, Frank Roemer, Frederik B. Laun, Michael Uder, Rolf Schröder, Pierre G. Carlier, and Armin M. Nagel

Whole Body

1114 Comparison of Intravoxel Incoherent Motion Imaging and Multiecho Dynamic Contrast-Based MRI in Rectal Cancer

Kine Mari Bakke, Endre Grøvik, Sebastian Meltzer, Anne Negård, Stein Harald Holmedal, Lars Tore G. Mikalsen, Lars Gustav Lyckander, Anne H. Ree, Kjell-Inge Gjesdal, Kathrine R. Redalen, and Atle Bjørnerud

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- 1125 Differentiating Axillary Lymph Node Metastasis in Invasive Breast Cancer Patients: A Comparison of Radiomic Signatures From Multiparametric Breast MR Sequences**
Ruimei Chai, He Ma, Mingjie Xu, Dooman Arefan, Xiaoyu Cui, Yi Liu, Lina Zhang, Shandong Wu, and Ke Xu
- 1133 Repeatability and Reproducibility of 3D MR Fingerprinting Relaxometry Measurements in Normal Breast Tissue**
Ananya Panda, Yong Chen, Kathleen Ropella-Panagis, Satyam Ghodasara, Marcie Stopchinski, Nicole Seyfried, Katherine Wright, Nicole Seiberlich, Mark Griswold, and Vikas Gulani
- 1144 Weakly Supervised 3D Deep Learning for Breast Cancer Classification and Localization of the Lesions in MR Images**
Juan Zhou, Lu-Yang Luo, Qi Dou, Hao Chen, Cheng Chen, Gong-Jie Li, Ze-Fei Jiang, and Pheng-Ann Heng
- Head and Neck**
- 1152 Accuracy of Deep Learning to Differentiate the Histopathological Grading of Meningiomas on MR Images: A Preliminary Study**
Tommaso Banzato, Francesco Causin, Alessandro Della Puppa, Giacomo Cester, Linda Mazzai, and Alessandro Zotti
- 1160 MRI Characteristics of Supraclavicular Brown Adipose Tissue in Relation to Cold-Induced Thermogenesis in Healthy Human Adults**
Gani Gashi, Philipp Madoerin, Claudia I. Maushart, Regina Michel, Jaël-Rut Senn, Oliver Bieri, and Matthias J. Betz
- Thoracic**
- 1169 Deep Convolutional Neural Networks With Multiplane Consensus Labeling for Lung Function Quantification Using UTE Proton MRI**
Wei Zha, Sean B. Fain, Mark L. Schiebler, Michael D. Evans, Scott K. Nagle, and Fang Liu
- Chest**
- 1182 Repeatability of Regional Pulmonary Functional Metrics of Hyperpolarized ¹²⁹Xe Dissolved-Phase MRI**
Andrew D. Hahn, Jeff Kammerman, Michael Evans, Wei Zha, Robert V. Cadman, Keith Meyer, Nathan Sandbo, and Sean B. Fain
- Pediatrics**
- 1191 Biexponential R2* Relaxometry for Estimation of Liver Iron Concentration in Children: A Better Fit for High Liver Iron States**
Christian A. Barrera, Dmitry Khrichenko, Suraj D. Serai, Helge D. Hartung, David M. Biko, and Hansel J. Otero
- Musculoskeletal**
- 1199 Intravoxel Incoherent Motion MRI for Discrimination of Synovial Proliferation in the Hand Arthritis: A Prospective Proof-of-Concept Study**
Motoshi Fujimori, Koichi Murakami, Hiroyuki Sugimori, Yutong Lu, Kenneth Sutherland, Nozomi Oki, Takatoshi Aoki, and Tamotsu Kamishima
- 1207 3D-T_{1ρ} Prepared Zero Echo Time-Based PETRA Sequence for In Vivo Biexponential Relaxation Mapping of Semisolid Short-T₂ Tissues at 3 T**
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- 1219 Associations Between Vertebral Body Fat Fraction and Intervertebral Disc Biochemical Composition as Assessed by Quantitative MRI**
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- 1227 Magnetization Transfer Saturation Imaging of Human Calf Muscle: Reproducibility and Sensitivity to Regional and Sex Differences**
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- 1251 Susceptibility-Weighted Imaging in Malignant Melanoma Brain Metastasis**
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- 1278 Measuring Tissue Sodium Concentration: Cross-Vendor Repeatability and Reproducibility of ²³Na-MRI Across Two Sites**
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- 1285 Investigating GABA Concentrations Measured With Macromolecule Suppressed and Unsuppressed MEGA-PRESS MR Spectroscopy and Their Relationship With BOLD Responses in the Occipital Cortex**
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Anirban Sengupta, Anandh K. Ramaniharan, Rakesh K. Gupta, Sumeet Agarwal, and Anup Singh
- Pelvis**
- 1307 Modified MR Dispersion Imaging in Prostate Dynamic Contrast-Enhanced MRI**
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- 1318 Three-Dimensional Turbo-Spin-Echo Amide Proton Transfer-Weighted MRI for Cervical Cancer: A Preliminary Study**
Yong-Lan He, Yuan Li, Cheng-Yu Lin, Ya-Fei Qi, Xiaoqi Wang, Hai-Long Zhou, Jun-Jun Yang, Yang Xiang, Hua-Dan Xue, and Zheng-Yu Jin
- Cardiac**
- 1326 Assessment of Sympathetic Reinnervation After Cardiac Transplantation Using Hybrid Cardiac PET/MRI: A Pilot Study**
Dietrich Beitzke, Alice Wielandner, Tim Wollenweber, Chrysoula Vraka, Verena Pichler, Keziban Uyanik-Uenal, Andreas Zuckermann, Andreas Greiser, Marcus Hacker, and Christian Loewe

Letter to the Editor

- 1336 Variation in Cardiovascular Magnetic Resonance Myocardial Contouring: Insights From an International Survey**
William E. Moody, Lucy E. Hudsmith, Ben Holloway, Thomas A. Treibel, Rhodri Davies, Rebecca Kozor, Christian Hamilton-Craig, Nicola C. Edwards, William M. Bradlow, James C. Moon, and Richard P. Steeds, On behalf of the British Society of Cardiovascular Magnetic Resonance and the Australia and New Zealand Working Group for Cardiovascular Magnetic Resonance