

Random Walk Imaging AB is developing a novel proprietary approach to diffusion MRI, and is commercializing dVIEWR powered by MICE Toolkit™ as a novel software solution for clinical researchers and radiologists to better visualize and analyze diffusion MRI data.

As always at ISMRM, we are encouraged by the number of abstracts relating to our diffusion MRI approach. Below you will find a list of such abstracts that we recommend you check out.

Sunday, 16 May 2021

17:15 - 18:00 CEST

Room Session: Concurrent 2
Session: Brain Microstructure
Session Type: Weekend Course

Multi-Dimensional Methods

Björn Lampinen

Monday, 17 May 2021

16:00 - 18:00 CEST

Room Session: Concurrent 6
Session: Diffusion Acquisition & Post-Processing
Session Type: Oral

Nonparametric 6D D-R1-R2 distribution imaging of the human brain: Initial results on healthy volunteers

Jan Martin et al.

18:00 - 20:00 CEST

Room Session: Concurrent 6
Session: Five Shades of Gray: Cutting-Edge & Clinically Relevant Diffusion MRI Techniques in Gray Matter
Session Type: Member-Initiated Symposium

Overcoming Messy Neurites: Microscopic Anisotropy & Diffusion Tensor Encoding Techniques

Chantal Tax

20:00 - 22:00 CEST

Room Session: Concurrent 5
Session: Diffusion in the Brain
Session Type: Oral

Characterization of Apparent Exchange Rate in Human Brain White Matter

Zhaoqing Li et al.

Evaluation of White Matter Microstructure in an HIV Population at Risk of Cerebral Small Vessel Disease using Microscopic Fractional Anisotropy

MD Nasir Uddin et al.

Feasibility of Filter-exchange Imaging (FEXI) in Measuring Different Exchange Processes in Human Brain

Zhaoqing Li et al.

Tuesday, 18 May 2021

16:00 - 18:00 CEST

Room Session: Concurrent 3
Session: Brain Microstructure: Application & Validation Across Species
Session Type: Oral

g-Ratio in the common marmoset: a comparison across different myelin-sensitive MRI metrics with b-tensor encoded diffusion

Christopher Rowley et al.

Measuring apparent water exchange using Filter Exchange Imaging and diffusion time dependent kurtosis imaging in post-mortem mouse brains

Chenyang Li, et al.

The spectral tilt plot (STP) – new microstructure signatures from spectrally anisotropic b-tensor encoding

Samo Lasič et al.

Tensor-valued Diffusion MRI Shows Elevated Microscopic Anisotropy and Tissue Heterogeneity in White and Grey Matter of Acute Ischemic Stroke

Mi Zhou et al.

Towards differentiation of white matter pathologies through B-tensor encoding

Ricardo Rios-Carrillo et al.

20:00 - 22:00 CEST

Room Session: Concurrent 3
Session: Diffusion: Encoding & Estimation
Session Type: Oral

Gradient waveform design for cross-term-compensated diffusion MRI: Demonstration of tensor-valued encoding in phantom and simulations

Filip Szczepankiewicz & Jens Sjölund

On the use of neural networks to fit high-dimensional microstructure models

João Pedro de Almeida Martins et al.

Tuesday, 18 May 2021

20:00 - 22:00 CEST

Room Session: Concurrent 3
Session: Diffusion: Encoding & Estimation
Session Type: Oral

b-M1-Optimized Waveforms for Improved Stability of Quantitative Intravoxel Incoherent Motion DWI

Gregory Simchick et al.

Wednesday, 19 May 2021

14:00 - 16:00 CEST

Room Session: Concurrent 1
Session: Optimized Signal Representation for Acquisition & Reconstruction
Session Type: Oral

Frobenius optimization of tensor-valued diffusion sampling schemes

Alexis Reymbaut

20:00 - 22:00 CEST

Room Session: Concurrent 4
Session: Microstructure: Modelling Gray & White Matter Diffusion
Session Type: Oral

SPHERIOUSLY? The challenges of estimating spherical pore size non-invasively in the human brain from diffusion MRI

Maryam Afzali et al.

Estimation of intra-axonal axial diffusivity by tensor-valued dMRI and powder-averaging

Markus Nilsson et al.

Digital Posters

Monday, 17 May 2021

Session: Data Acquisition Sampling Trajectories
Room Session: Concurrent 1

Boosting the SNR-efficiency of Free Gradient Waveform Diffusion MRI using Spiral Readouts and Ultra-Strong Gradients

Lars Mueller et al.

Session: Flow, Volume & Permeability: DSC-MRI & Non-Contrast
Room Session: Concurrent 6

Diffusion-filtered exchange measurements of blood-brain barrier permeability to water

Elizabeth Powell et al.

Digital Posters cont.

Tuesday, 18 May 2021

Session: Brain Microstructure: Gray Matter, Pathology & Preclinical Validation
Room Session: Concurrent 3

Microstructural Diffusion MRI in Mouse Models of Severe and Repetitive Mild Traumatic Brain Injury

Naila Rahman et al.

Nonparametric D(O)-distributions for model-free analysis of b(O)-encoded multidimensional diffusion MRI on ex vivo rat brain

Omar Narvaez et al.

Session: Diffusion: Encoding & Estimation
Room Session: Concurrent 3

Gradient waveforms for comprehensive sampling of the frequency and "shape" dimensions in b(O)-encoded diffusion MRI

Hong Jiang & Daniel Topgaard

Tissue microstructure by ellipsoidal tensor encoding with independently varying spectral anisotropy and tuning

Samo Lasić & Henrik Lundell

A Novel Fast Quantitative Parameter Distribution Estimator Applied to Diffusion Tensor Distribution Imaging

Anders Garpebring

Quantifying the Repeatability of Microstructural Measures Derived from Free Gradient Waveforms

Kristin Koller et al.

Investigating time dependent diffusion, microscopic anisotropy and T2 effects in the mouse heart

Henrik Lundell et al.

Session: Diffusion: Encoding, Estimation & Machine Learning
Room Session: Concurrent 3

Influence of electrocardiogram signal triggering on filter exchange imaging

Julian Rauch et al.

Digital Posters cont.

Wednesday, 19 May 2021

Session: Signal Representations for Quantitative Applications

Room Session: Concurrent 1

Enhancing diffusion tensor distribution imaging via denoising of tensor-valued diffusion MRI data

Jan Martin et al.

Extracting information from diffusion MRI models to visualize the adequacy of acquisition protocols

Samuel St-Jean et al.

QTI+: a constrained estimation framework for q-space trajectory imaging

Magnus Herberthson et al.

Session: Modelling: Diffusion, Kinetics & More

Room Session: Concurrent 1

Time dependence of flow compensated intravoxel incoherent motion in tumor

Oscar Jalnefjord et al.

Session: Diffusion: Phantoms & Simulations

Room Session: Concurrent 4

Detection of alterations in water transport across the cell membrane by filter-exchange spectroscopy

Athanasia Kaika et al.

Lamellar liquid crystal phantom for validating MRI methods to distinguish oblate and prolate diffusion tensors on whole-body scanners

Hong Jiang et al.

Estimating the pore size in a biomimetic phantom using free gradient waveforms

Maryam Afzali et al.

Session: Multicomponent Models of Diffusion, Perfusion & Relaxation

Room Session: Concurrent 4

Nonparametric 5D D-R2 distribution imaging with single-shot EPI at 21.1 T: Initial results for in vivo rat brain

Jens Rosenberg et al.

MR Fingerprinting with B-tensor encoding scheme for simultaneous measure of relaxation and microstructure diffusion

Maryam Afzali et al.

Thursday, 20 May 2021

Session: Cardiovascular Tissue Characterization: Beyond Relaxometry

Room Session: Concurrent 3

Multidimensional Diffusion MRI in the Ex Vivo Mouse Heart

Irvin Teh et al.

Session: Microstructure: Models, Sampling & Analysis

Room Session: Concurrent 4

Cerebrospinal Fluid Partial Volume Effects in Microscopic Fractional Anisotropy Imaging

Nico Arezza & Corey Baron

Comparison of DCE-MRI and FEXI in the measurement of vascular water exchange in high-grade glioma

Zejun Wang et al.

Time-dependent anisotropic diffusion in the mouse heart: feasibility of motion compensated tensor-valued encoding on a 7T preclinical scanner

Samo Lasič et al.

Toward high-resolution mapping of microscopic anisotropy in the cortex using b-tensor diffusion imaging with a spiral readout at 7 Tesla

Sajjad Feizollah & Christine Tardif