

DACH-ISMRM Annual Meeting 2024

Venue: Lecture Hall of the MPI for Intelligent Systems, Max Planck Ring 4, 72076 Tübingen

Day 1: Wednesday, September 04

07:45 Registration & Coffee

08:30 Welcome Prof. Dr. Klaus Scheffler, Max Planck Institute for Biological Cybernetics

08:45 Plenary Talk Prof. Laura M. Schreiber, PhD, MBA
„Excellence and Objectivity and the Human Factor in Research“

09:30 Scientific Session 1 Hyperpolarization and Metabolic Imaging **Chairs:** Maria Anikeeva, Jan-Bernd Hövener

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|-------|----------------------|-----|------------------------------------------------------------------------------------------------------------------------|
| 09:30 | Anaïs Choffart | 101 | Non-invasive Mapping of Acidosis and Extracellular Lactosis for Assessing Tumor Invasion In Vivo |
| 09:42 | Josh Peters | 102 | T ₁ alterations in nitrogen-15 hyperpolarized molecules |
| 09:54 | Jakob Gaubatz | 103 | Phase-based 3D pH imaging in vivo using hyperpolarized [1,5- ¹³ C ₂]Z-OMPD |
| 10:06 | Friedemann Bullinger | 104 | Magnetic resonance in the zero and ultralow field regime – a transition from one-dimensional oscillation to precession |
| 10:18 | Nicolas Kempf | 105 | ¹³ C imaging of pyruvate with SABRE at Ultra-Low field |

10:30 Coffee Break

11:00 Scientific Session 2 MRI System Hardware and Technical Innovations **Chairs:** Georgiy Solomakha, Pavel Povolni

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|-------|------------------|-----|-----------------------------------------------------------------------------------------------------------------------------|
| 11:00 | Yenal Gökpek | 201 | A parahydrogen polarizer for >30 bars hydrogenation and automated purification |
| 11:12 | Jonathan Stelter | 202 | B ₀ self-navigation achieves contrast-independent respiratory motion estimation in radial stack-of-stars imaging |
| 11:24 | Teresa Reichl | 203 | From 4D Flow MRI to MPI: A study of the flow dynamics in an aneurysm phantom |
| 11:36 | Christoph Aigner | 204 | Towards UHF Spinal Cord MRI: Overcoming B ₀ & B ₁ ⁺ Challenges |
| 11:48 | Tim Haigis | 205 | Quantitative Comparison of pTx Coils at 9.4T |

12:00 Lunch Break

13:15 Gorter Session I **Chairs:** Susanne Schnell, Dario Bosch

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|-------|-----------------|----|------------------------------------------------------------------------------------------------------------------------------------|
| 13:30 | Jonathan Endres | G1 | Phase distribution graphs for fast, differentiable, and spatially encoded Bloch simulations of arbitrary MRI sequences |
| 14:00 | Vanessa Franke | G2 | In vivo determination of pH and magnesium ion concentration by means of ³¹ P MRSI: A multi-parametric look-up approach |
| 14:30 | Martin Grashei | G3 | Simultaneous magnetic resonance imaging of pH, perfusion and renal filtration using hyperpolarized ¹³ C-labelled Z-OMPD |

15:00 Coffee Break

15:30 Gorter Session II **Chairs:** Susanne Schnell, Dario Bosch

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|-------|--------------------|----|-----------------------------------------------------------------------------------------------------------------------------------|
| 15:30 | Tor Rasmus Memhave | G4 | Establishing an MR-based profile of lithium treatment |
| 16:00 | Niklas Wallstein | G5 | Anisotropic Longitudinal Water Proton Relaxation in White Matter Investigated Ex Vivo in Porcine Spinal Cord with Sample Rotation |

16:30 Poster Session

17:45 Plenary Talk Dr. Lars G. Hanson
"Mapping current-induced fields in the brain using MRI"

18:30 Get Together Saints & Scholars
Wilhelmstraße 44
72074 Tübingen

Day 2: Thursday, September 05

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| 08:30 | Plenary Talk | Natalia Petridou, D.Sc. "From blood to neuron - how close can we get with BOLD fMRI in humans?" | |
| 09:15 | Scientific Session 3.1 | MRI Sequence Development and Optimization | Chairs: Klaus Scheffler, Praveen Valsala |
| 09:15 | Andreas Holl | 301 <i>Open SPEN and Non-linear Gradient Implementation using Pulseq</i> | |
| 09:27 | Simon Weinmüller | 302 <i>MR-zero meets FLASH – Controlling the transient signal decay in gradient- and rf-spoiled gradient echo sequences using Phase Distribution Graphs</i> | |
| 09:39 | Martin Freudensprung | 303 <i>Reproducible pTx sequence development using Pulseq</i> | |
| 09:51 | Ariel Hannum | 304 <i>PNS-Constrained Arbitrary Gradient Waveform Design for DWI on Ultra-High-Performance MRI Systems</i> | |
| 10:05 | Coffee Break | | |
| 10:40 | Scientific Session 3.2 | MRI Sequence Development and Optimization II | Chairs: Klaus Scheffler, Praveen Valsala |
| 10:40 | Fabian Gutjahr | 305 <i>Addressing the Ejection Fraction Dependence of FAIR-ASL Perfusion</i> | |
| 10:52 | Jacopo Frignani | 306 <i>3D Filter-Exchange Imaging Using Slab-Selective Excitation</i> | |
| 11:04 | Niklas Himburg | 307 <i>Errors in Actual Flip Angle Imaging (AFI) of polyvinylpyrrolidone (PVP) solutions at 3T and 7T</i> | |
| 11:16 | Yannik Ott | 308 <i>Training deep learning reconstruction models for radial real-time cardiac cine MRI using synthetic golden-angle data</i> | |
| 11:30 | Career Opportunities | | Chairs: Emily Hoffmann, Dana Ramadan |
| 12:30 | Lunch Break | | |
| 13:45 | Scientific Session 4 | Clinical and Biological Applications | Chairs: Gisela Hagberg, Benjamin Bender |
| 13:45 | Dennis C. Thomas | 401 <i>Mapping of cerebral metabolite concentrations in brain tumors using 1H-MRSI and quantitative MRI</i> | |
| 13:57 | Enrica Wilken | 402 <i>bSSFP acquisition in time-lapse MRI: three-dimensional single-cell tracking with high temporal resolution</i> | |
| 14:09 | Robert Alexander Vornhusen | 403 <i>Light-switchable giant unilamellar vesicles: A model for cell size and transmembrane water exchange</i> | |
| 14:21 | Vinod Kumar | 404 <i>Mesoscopic functional mapping of the globus pallidus nuclei at 9.4T</i> | |
| 14:33 | Rolf Otto Reiter | 405 <i>Intervertebral disc degeneration assessed by in vivo multifrequency MR elastography</i> | |
| 14:45 | Maik Rothe | 406 <i>Multi-parametric characterization and clustering of fast relaxing knee tissues using 3D UTE</i> | |
| 14:57 | Elizabeth Huaroc Moquillaza | 407 <i>Free-breathing full pancreas water T1 mapping</i> | |
| 15:09 | Christoph Birkel | 408 <i>Performance of Quantitative Susceptibility Mapping in brain tissue with extreme iron content</i> | |
| 15:25 | Voting for Poster Prizes | | |
| 15:40 | Coffee Break | | |
| 16:00 | DACH-ISMRM Business Meeting | | |
| 17:00 | Plenary Talk | Prof. Dr. Dr. h.c. Jürgen Hennig "Innovation in MRI: Back to the Future?" | |
| 17:45 | Awards & Farewell | | |

Kindly sponsored by:

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<https://www.tuebingen.mpg.de/dach-ismrm-2024>

on-site organizing committee:

Dana Ramadan, Dario Bosch, Sebastian Müller, Felix Glang

