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PROGRAM BOOK

ISMRM Benelux

ANNUAL MEETING 2025

17th Annual Meeting

17th of January, 2025 Gooiland, Hilversum

Photo by Ryama Sakamoto

ISMRM  Benelux

ANNUAL MEETING 2025

WELCOME

Dear participants and guests,

I would like to extend to you a warm welcome to the ISMRM Benelux Chapter Meeting 2025! We are thrilled to have you join us in Hilversum for a day filled with exciting new developments, knowledge exchange and networking opportunities.

This year's meeting brings together an exceptional community of MR scientists, researchers, clinicians, and industry leaders from all across the Benelux. We encourage you to take full advantage of the scientific sessions, interactive workshops, and networking opportunities that have been carefully designed to foster learning and innovation.

The future of MRI holds immense promise, with advancements such as enhanced resolution, faster imaging techniques, portable low-field scanners, and novel contrast mechanisms paving the way for even greater insights into animal and human health and disease. These developments will continue to transform both research and clinical applications, driving the field forward.

We look forward to a memorable day of inspiration, discovery, and connecting with like-minded professionals in MRI!

Best regards,
Fieke Prinse
On behalf of the ISMRM Benelux Meeting Committee 2025

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MR SOLUTIONS

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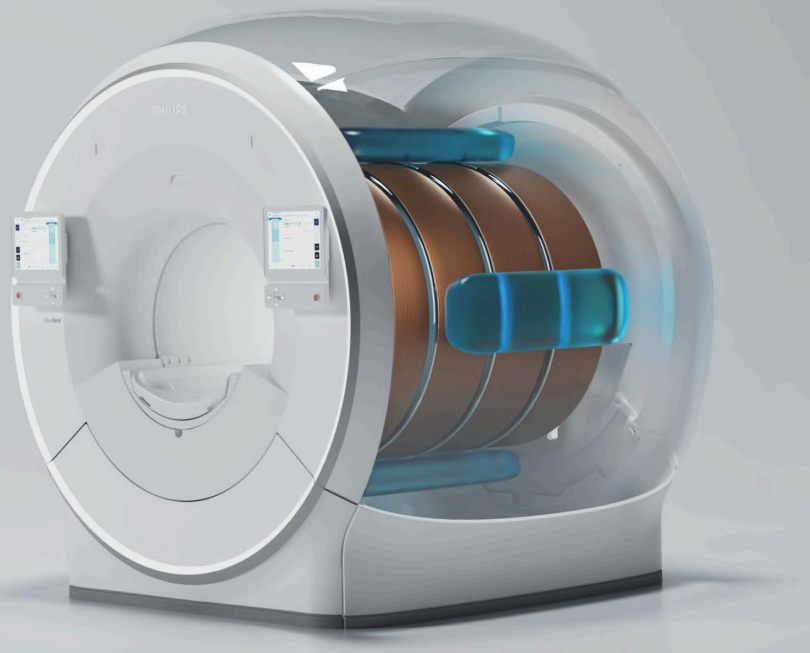
The new reality in MR

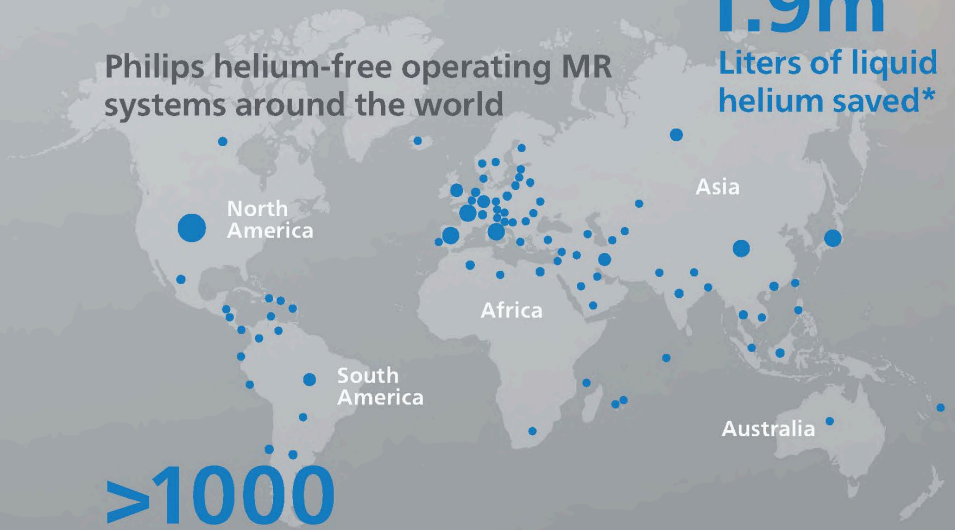


Helium is a non-renewable resource, and its prices have increased in recent years for most users due to its scarcity. Transition to helium free MR operations with BlueSeal, forget about helium-related complications, manage risk and achieve clinical and operational excellence.

Visit our **BlueSeal** web page

1.9m
Liters of liquid helium saved*

Philips helium-free operating MR systems around the world



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Proven technology with +1000 systems around the world

Our industry's first and only helium-free 1.5T MR portfolio increases access to care for more people in more places and provides clinicians with high diagnostic quality.

* The amount of liquid helium saved is a calculation compared to a classic magnet with 1500 liters of helium

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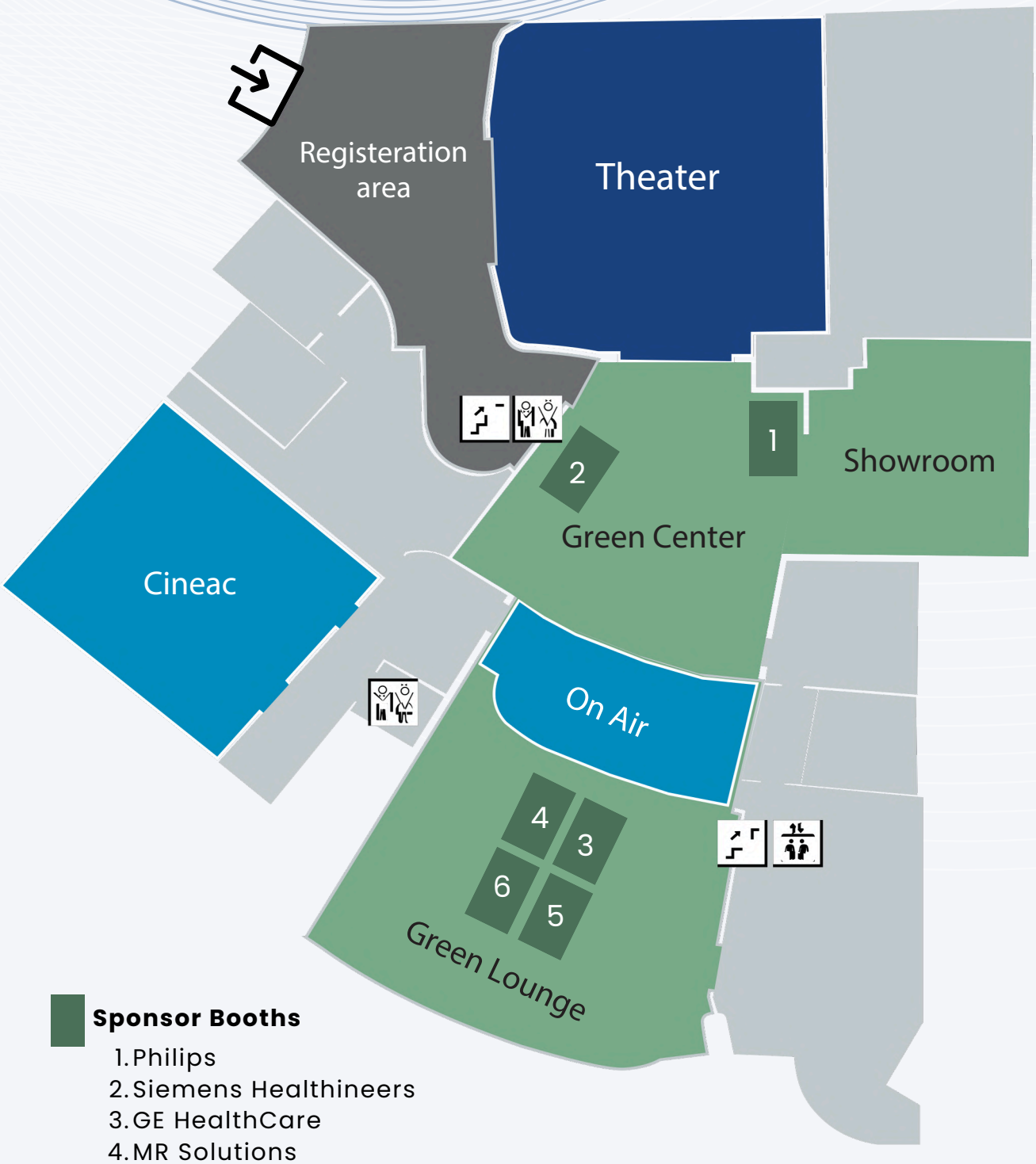
FLOOR PLAN
Ground floor



Sponsor Booths

1. Philips
2. Siemens Healthineers
3. GE HealthCare
4. MR Solutions
5. NVision
6. KALCIO Healthcare

PROGRAM

8.30	Registration + Coffee	Registration area + Green Center
9.15	**Opening plenary session** Keynote by Martijn Froeling	Theater
10.30	Poster session I + coffee break **sponsored by** Canon MEDICAL	Showroom + Green Lounge
11.25	**Parallel session I**	
	Neuroimaging	Theater
	MRI acquisition	Cineac
	Oncology	On Air
12.25	Lunch	Green Lounge + Green Center
	General assembly meeting (ALV)	On Air
13.20	**Workshops**	
	Hyperpolarized 13C MRI by NVision	Theater
	AI applications in MRI by GE HealthCare	Cineac
	Thesis Production: Get started the right way! by Proefschriftmaken	On Air
13.55	**Parallel session II**	
	Neuroimaging	Theater
	Image reconstruction and postprocessing	Cineac
	Body MRI	On Air
14.55	Poster session II + coffee break	Showroom + Green Lounge
15.50	**Parallel session III**	
	Cardiovascular MRI	Theater
	Hardware development	Cineac
	Simulation and modeling	On Air
16.40	**Closing ceremony, awards**	Theater
17.00	Networking Drinks	Green Lounge + Green Center
18.00-20.00	Dinner	Green Lounge + Green Center

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MAGNETOM Terra.X

Make the difference.

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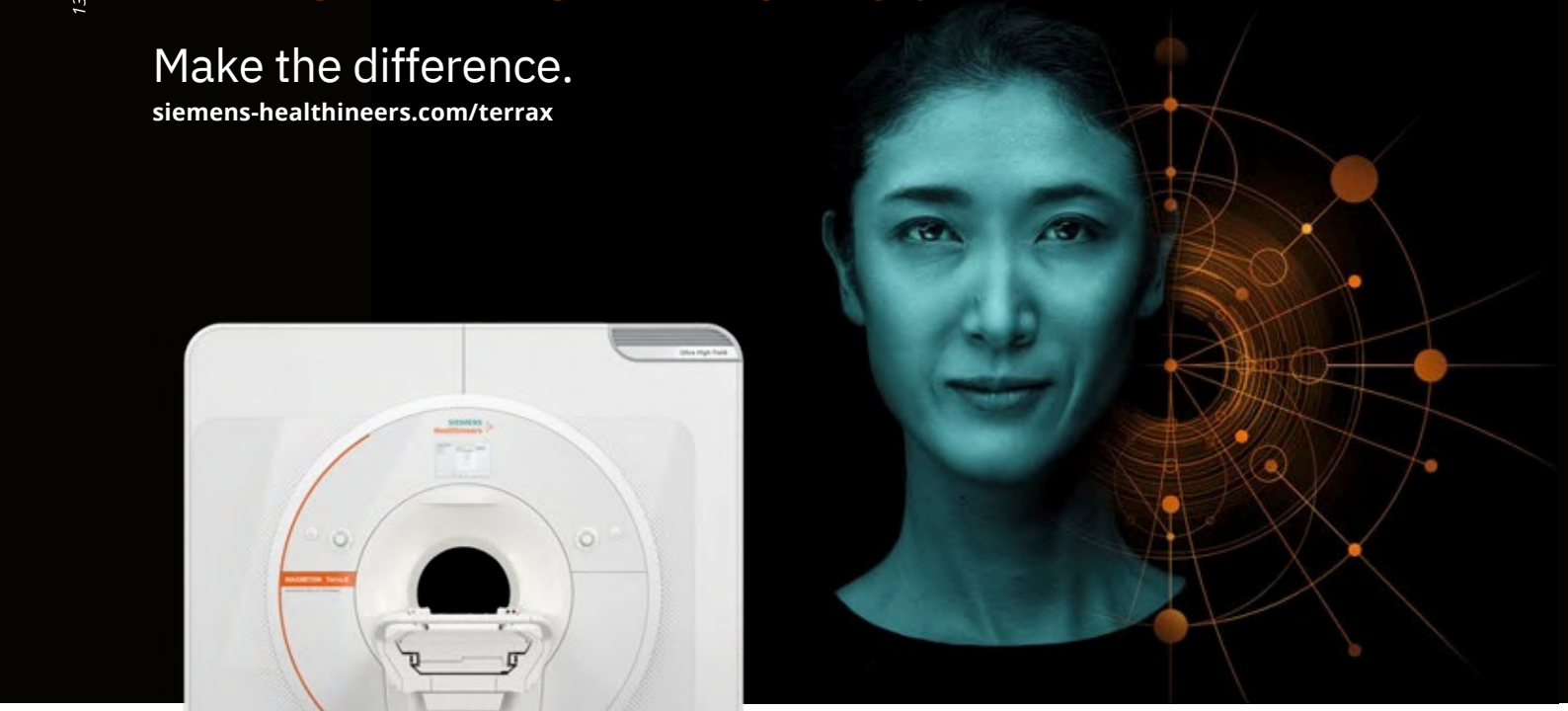
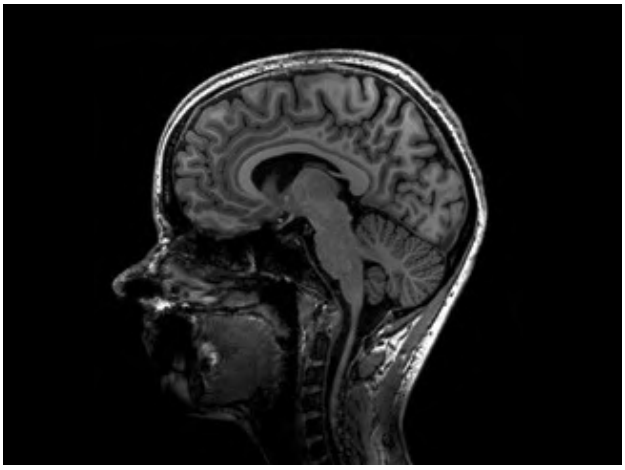


MAGNETOM Terra.X* introduces the next generation 7T MRI that will enable you to make the difference. With its groundbreaking Ultra IQ Technology, it will deliver unprecedented image clarity that allows you to confidently assess subtle pathological details. In combination with our AI-powered Deep Resolve, MAGNETOM Terra.X ultimately will take clinical routine to a new level. MAGNETOM Terra.X makes the difference for clinicians and scientists.



StudyID: 4aaaa0264 / 8Tx32Rx head coil

SIEMENS Healthineers

PLENARY SESSION
Power Pitches
10:10 - Theater

PP-001 Maaike Konig

Dynamic imaging of deuterated glucose in the stomach, portal vein, and liver using 3D deuterium MRSI at 7T

Imaging and Oncology, University Medical Center Utrecht, Utrecht, The Netherlands

PP-002 Britt van den Heuvel

Linking brain and eye fluid dynamics: Multi-b-value diffusion derived interstitial fluid volume relates to tear fluid AQP5 levels

Department of Radiology & Nuclear Medicine, Maastricht University Medical Center+, Maastricht, The Netherlands

PP-003 Zarah van der Pal

Long-term stimulant treatment and development of brain and behaviour: a naturalistic long-term follow-up of boys and men with ADHD

Department of Radiology & Nuclear Medicine, Amsterdam University Medical Center, Amsterdam, The Netherlands

PP-004 Gerrit Arends

Bilateral breast gradient insert prototype for strong diffusion encoding at 3T

Department of Radiology andd Oncology, Centrer for Image Sciences, University Medical Center Utrecht, Utrecht, The Netherlands

PP-005 Stephanie Gonzalez Riedel

Design and Evaluation of an Educational MRI Simulator: eduMRIsim

Biomedical Engineering, Eindhoven University of Technology, Eindhoven, The Netherlands

PP-006 Madda Debiasi

Highly-accelerated CSF-STREAM: two-fold faster CSF-mobility and FA measurement in PVS, via locally low rank reconstruction

C.J. Gorter MRI Center, Department of Radiology, Leiden University Medical Center, Leiden, The Netherlands

PARALLEL SESSION I
Neuroimaging
11:25 - Theater

Moderators

Chloé Najac
Leiden UMC

Merel van der Thiel
Maastricht UMC+

O-001 Bas Schilder

Detecting dopaminergic degeneration in clinically uncertain parkinsonian syndrome patients using fast MR-STAT relaxometry

Computational Imaging Group for MRI Therapy & Diagnostics, Department of Radiotherapy, University Medical Center Utrecht, Utrecht, The Netherlands

O-002 Mathijs Dijsselhof

Cardiovascular risk factors are associated with brain ageing

Radiology and Nuclear Medicine, Amsterdam University Medical Center, Amsterdam, The Netherlands

O-003 Navid Jabarimani

Characterizing differences between white and gray matter T1W-based segmentations at 0.6T and 1.5T

C.J. Gorter MRI Center, Radiology, Leiden University Medical Center, Leiden, The Netherlands

O-004 Joëlle van Rijswijk

Longitudinal assessment of changes in the BBB water permeability in a mouse model of Huntington's Disease using multi-TE ASL MRI

Bio-Imaging Lab, University of Antwerp, Antwerp, Belgium

O-005 Emiel Roefs

Bi-directional BOLD-CSF coupling using sagittal BOLD imaging with additional saturation slab for glymphatic function assessment

C.J. Gorter MRI Center, Radiology, Leiden University Medical Center, Leiden, The Netherlands

PARALLEL SESSION I
MRI Acquisition
11:25 - Cineac

Moderators

Miha Fuderer
UMC Utrecht

Kyungmin Nam
UMC Utrecht

O-011 Vladislov Koloskov
Improving Fetal MRI: The Impact of a Flexible Metasurface-based Pad
Magnetic Detection & Imaging Group, TechMed Centre, University of Twente, Enschede, The Netherlands
School of Physics and Engineering, ITMO University, Saint Petersburg, Russia

O-012 Ayda Arami
Toward Microbubble Imaging in MRI: Detection of Microscopic Spherical Structures with Size-Selective T2 Contrast
Imaging Physics, Delft University of Technology, Delft, The Netherlands

O-013 Helena Durrant
Multi-Echo versus T2-Prepared pCASL: what to use for measuring water transport across the Blood Brain Barrier
C.J. Gorter MRI Center, Radiology, Leiden University Medical Center, Leiden, The Netherlands

O-014 Reagan Tompkins
Third Trimester Fetal 4D Flow MRI with Motion Correction
Department of Radiology & Nuclear Medicine, Amsterdam University Medical Center, Amsterdam, The Netherlands

O-015 Luka Stam
Interleaved 2H and 31P MRSI acquisitions of the liver at 7T employing a double tuned transmit bore coil and receive body array
Center for Image Sciences, University Medical Center Utrecht, Utrecht, The Netherlands

PARALLEL SESSION I

Oncology

11:25 - On Air

Moderators

Esther Warnert
Erasmus MC

Osman Akdag
Netherlands Cancer Institute

O-016 Patrick Tang

Can arterial spin labeling MRI improve radiotherapy target delineation of glioblastoma?

Brain Tumor Center, Erasmus MC Cancer Institute, University Medical Center Rotterdam, Rotterdam, The Netherlands

O-017 Alvja Mali

Ultrastructure-Driven pH Sensitivity in Perfluorocarbon-PLGA Nanoparticles for 19F MRI

Department of Cell Biology and Immunology, Wageningen University and Research, Wageningen, The Netherlands

O-018 Li Shen Ho

Differences in metabolic behavior of liver metastases of colorectal carcinoma: [18F]FDG-PET vs. DMI at 7T

Imaging and Oncology, University Medical Center Utrecht, Utrecht, The Netherlands

O-019 Karen van der Werff

Towards the use of a single bolus in MR Vascular Fingerprinting with DSC-HEPI MRI: an in-vivo exploration

Department of Radiology and Nuclear Medicine, Erasmus MC, University Medical Center Rotterdam, Rotterdam, The Netherlands

O-020 Romy Buijs

Metabolic modeling using Deuterium Metabolic Imaging data in healthy, epileptogenic and glioblastoma brain tissue

Center for Image Sciences, University Medical Center Utrecht, Utrecht, The Netherlands

NVISION

Hyperpolarized MRI made simple

Easy to use • Fast • Reliable

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info@nvision-imaging.com

WORKSHOPS

NVISION

NVision is a developer of fast, reliable, and user-friendly 13C MRI hyperpolarizers and corresponding hyperpolarized imaging agents. Our PHIP-based technology enables the precise assessment of in vivo metabolism using standard MRI, supporting preclinical and clinical applications such as cancer diagnostics and therapy response monitoring. Deployment of preclinical polarizers began in October 2024. This workshop, *Hyperpolarized 13C MRI: A Practical Overview and Latest Advances*, will provide attendees with a clear understanding of what is needed to integrate hyperpolarization into MR research, emphasizing the simplicity of the process. Topics include the required hardware, pulse sequences, data processing strategies, and the unique value of metabolic imaging for unraveling real-time biochemical processes. We will also introduce POLARIS, our cutting-edge preclinical polarizer, and discuss the latest advancements in hyperpolarized 13C MRI.

GE HealthCare

GE HealthCare is a leading global medical technology, pharmaceutical diagnostics, and digital solutions innovator. Join our workshop to learn about *AI applications in MRI*, about the great potential of public-private partnerships to solve today's challenges in healthcare and about our perspective on career planning in industry.

PROEFSCHRIFT MAKEN

Thesis Production: Get started the right way! We will go into detail about the production of your thesis, layout possibilities, and your sustainable digital thesis. After our workshop, you will know everything you need to get started with the production of your thesis!

PARALLEL SESSION II
Neuroimaging
13:55 - Theater

Moderators

Leon Munting
Leiden UMC

Monica van den Berg
University of Antwerp

O-006 Damon Verstappen
DCE-MRI reveals elevated blood-brain barrier leakage of heterogeneous white matter in cerebral small vessel disease
Department of Radiology & Nuclear Medicine, Maastricht University Medical Center+, Maastricht, The Netherlands

O-007 Diogo Fernandes
Effects of acetazolamide and caffeine on blood-brain-barrier water permeability measured by non-invasive ASL-based MRI sequences
Radiology and Nuclear Medicine, Amsterdam University Medical Center, Amsterdam, The Netherlands

O-008 Ellen van Hulst
Detection of Cardiac-Induced Volumetric Brain Tissue Pulsations and Compressions in a Post-Trauma Craniectomy Patient: An MRI Case Report
Translational Neuroimaging group, Center for Image Sciences, University Medical Center Utrecht, Utrecht, The Netherlands

O-009 Guus Vorst
Brain shrinkage may lead to skull thickening: a study in leukodystrophies and multiple sclerosis
Dept of Child Neurology, Amsterdam Leukodystrophy Centre, Emma Children's Hospital, and Amsterdam Neuroscience, Amsterdam UMC, Vrije Universiteit, Amsterdam, The Netherlands

O-010 Judith van Rooij
Short-term caloric restriction or resveratrol supplementation alters large-scale brain network connectivity in male and female rats
Bio-Imaging lab, University of Antwerp, Antwerp, Belgium

PARALLEL SESSION II
Image Reconstruction and Postprocessing
13:55 - Cineac

Moderators

Daniel Uher
Maastricht UMC+

Yiming Dong
Leiden UMC

O-026 Fei Xu
More accurate synthetic MRI to shorten clinical protocols
Computational Imaging Group for MR diagnostics & therapy, Center for Image Sciences, University Medical Center Utrecht, Utrecht, The Netherlands

O-027 Marius Burman Ingeberg
Evaluating the performance of poroelastic and poroviscoelastic models in intrinsic MR elastography
Translational Neuroimaging Group, Center for Image Sciences, University Medical Center Utrecht Utrecht, The Netherlands

O-028 Eva Aalbregt
Automated post-processing of longitudinal 4D flow MRI in patients with an abdominal aortic aneurysm
Department of Radiology and Nuclear Medicine, Amsterdam University Medical Center, Amsterdam, The Netherlands

O-029 Natalia Korobova
Uncertainty in Deep Learning of DCE-MRI Parameter Estimation
Radiology and Nuclear Medicine, Amsterdam University Medical Center, Amsterdam, The Netherlands

O-030 Chinmay Rao
Accelerated FLAIR Imaging at 0.6T using T2W-guided Multi-contrast Deep Learning-based Reconstruction using a Zero-shot Approach
Department of Radiology, Leiden University Medical Center, Leiden, The Netherlands

Cerebriu

Every patient diagnosed in time

Apollo is an AI-based software suite designed to enable on-table detection of critical findings such as infarcts, intracranial tumors and hemorrhages.

It provides real-time alerts on critical conditions for priority reading and real-time adaptation of MR scanning protocols, helping radiology departments achieve excellence - from image acquisition to diagnosis.

Apollo Software Suite:

SMART Priority

Apollo monitors scans in real- time, flagging critical findings as they emerge.

SMART Protocol

Apollo's proactive approach to detect critical conditions allows to guide protocol adaptation real-time.

SMART Reading

Apollo prioritizes brain MRI scans in a consolidated worklist, based on the severity and urgency of detected findings.

Apollo enables:

- Improve operational efficiency
- Faster turnaround time for acute findings
- Reduce patient recalls
- Improved patient journeys

PARALLEL SESSION II

Body MRI

13:55 - On Air

Moderators

Pandichelvam Veeraiah
Radboud UMC

Pim Pullens
Ghent University

O-024 Luuk Vos

Time-resolved 3D-PC MRI measurements of the upper leg muscles during dynamic knee flexion: the effect of the fatigue threshold

Biomedical Engineering and Physiscs, Amsterdam University Medical Center, Amsterdam, The Netherlands

O-023 Max van Riel

4D Time-Resolved Strain Tensor Analysis Using Spectro-Dynamic MRI Reveals Muscle Activation Patterns

Computational Imaging Group for MR diagnostics & therapy, Center for Image Sciences, University Medical Center Utrecht, Utrecht, The Netherlands

O-022 David Heesterbeek

Quantitative in-vivo analysis of biomechanical properties reveals tissue stiffness changes during contraction of the thigh muscles

Computational Imaging Group for MR diagnostics & therapy, University Medical Center Utrecht, Utrecht, The Netherlands

O-021 Benthe Ariëns

Impact of hyperglycemia on kidney perfusion of matched T2D and NC adults using multiparametric MRI

Radiology and nuclear medicine, Amsterdam University Medical Center, Amsterdam, The Netherlands

O-025 Irina De Alba Alvarez

Female levator ani muscle defect assessment in supine and upright position

Multi Modality Medical Imaging (M3I), TechMed Centre, University of Twente, Enschede, The Netherlands

PARALLEL SESSION III
Cardiovascular MRI
15:50 - Theater

Moderators

Bram Coolen
Amsterdam UMC

Maarten Terpstra
UMC Utrecht

O-035 Thomas Olausson
Free-Running Time-Resolved 3D+time CMR at 40 Hz in a One Minute Scan using Cartesian Sampling and CMR-MOTUS
Computational Imaging Group for MR Therapy and Diagnostics, Center for Image Science, University Medical Center Utrecht, Utrecht, The Netherlands

O-036 Juul Bierens
The association between MRI-based Carotid Plaque-RADS and ipsilateral cerebral ischemia recurrence
Department of Radiology & Nuclear Medicine, Maastricht University Medical Center+, Maastricht, The Netherlands

O-037 Geoffrey Wendell de Mooij
Oxygenation-Sensitive Cardiac Magnetic Resonance: Non-Invasive and Needle-Free Alternative for Assessment of Myocardial Oxygenation-Initial Clinical Experience-
Deptartment of Cardiology, Amsterdam University Medical Center, Amsterdam, The Netherlands

O-038 Matic Pusovnik
Tracking Endothelial Activation Over Time in Myocardial Ischemia-Reperfusion Injury Using In Vivo MRI and Targeted Iron Oxide Particles
Biomedical MRI, Department of Imaging and Pathology, KU Leuven, Leuven, Belgium

PARALLEL SESSION III
Hardware Development
15:50 - Cineac

Moderators

Irena Zivkovic
TU Eindhoven

Edwin Versteeg
UMC Utrecht

O-039 Erik van Riel

A Low Inductance Nonlinear Gradient Array Design to Mitigate PNS and Reduce Voltage for Extension to Ultrasonic Whole-Body Fast and Silent MRI

Department of Radiology, University Medical Center Utrecht, Utrecht, The Netherlands

O-040 Jules Vliem

Toroid-inspired RF Volume Coils for Enhanced Transmit Efficiency at Ultra-Low Field 47mT MRI: A Comparison with Solenoid Coils

Department of *Electrical Engineering, Eindhoven University of Technology, Eindhoven, The Netherlands*

O-041 Kaiqi Meng

An Integrated Unipolar Ultrasonic Gradient for Mitigating PNS and Aliasing in Accelerated Silent MRI

Department of Radiology, University Medical Center Utrecht, Utrecht, The Netherlands

O-042 Lyanne Bude

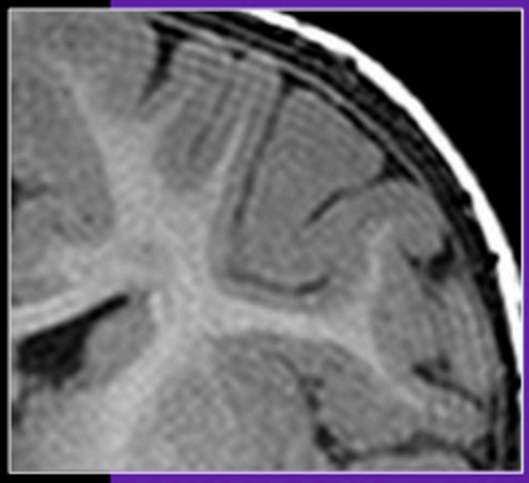
Self-decoupled toroid coils for densely packed receive arrays at 3T MRI

Department of Electrical Engineering, Eindhoven University of Technology, Eindhoven, The Netherlands

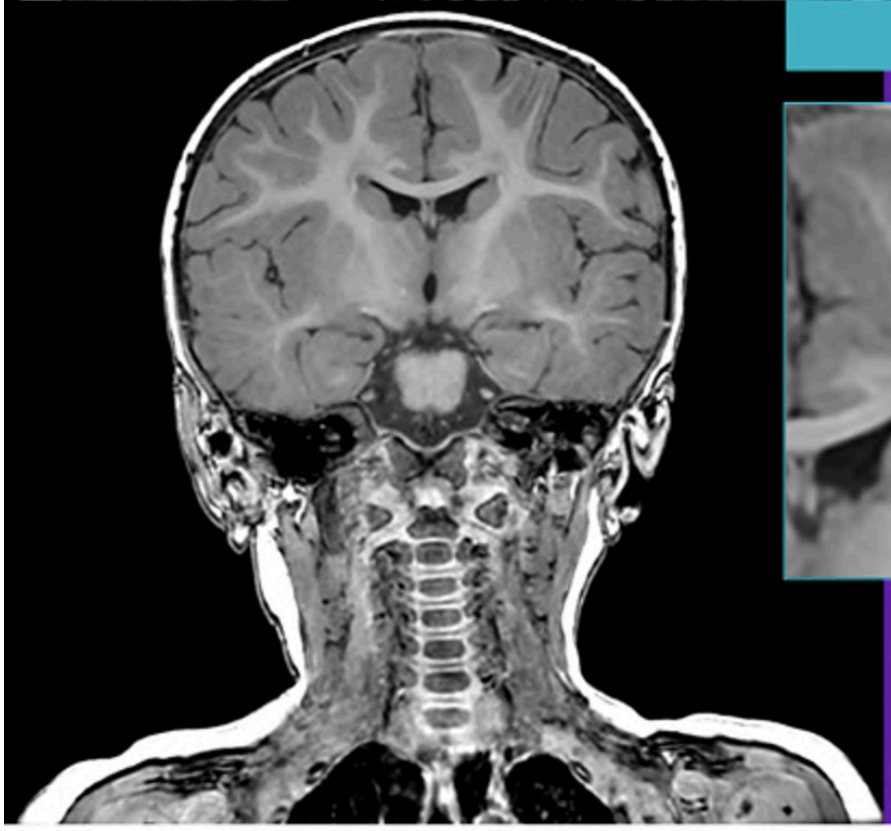
AIR™ Recon DL 3D

8-month-old pediatric brain

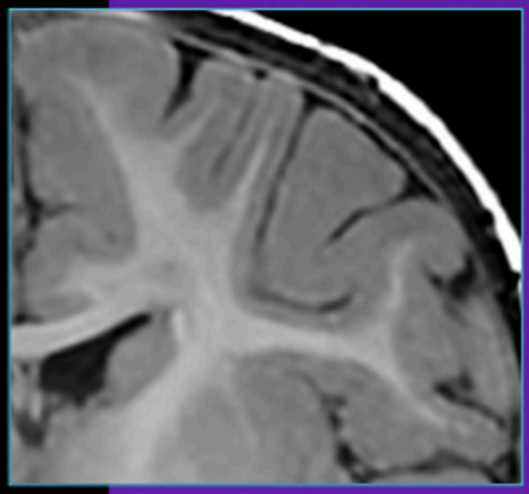
Conventional



3D BRAVO
Matrix = 264 x 264
FOV = 22 x 22 cm^2
Slice = 0.8 mm / 264 slices
Scan time = 7:15 min



AIR™ Recon DL



GE HealthCare

PARALLEL SESSION III
Simulation and Modeling
15:50 - On Air

Moderators

Patrick Fuchs
University of Antwerp

Ayda Arami
TU Delft

O-031 Koen Custers
Optimization and application of MP2RAGE sequence for T1-based thermometry in the fat layer of the human calve
Biomedical Engineering, Medical Imaging Analysis, Eindhoven University of Technology, Eindhoven, The Netherlands

O-032 Jiying Dai
Demonstration of substantial overestimation of signal when combining low-SNR signals with self-weighted methods
University Medical Center Utrecht, Utrecht, The Netherlands

O-033 Dennis van de Sande
A Digital Phantom for 3D MR Spectroscopy Data Simulation
Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, The Netherlands

O-034 Niels Bijl
Simulation Aided Design of an Integrated MR Receive Array for MR-Guided Radiofrequency Hyperthermia Treatment of the Breast
Department of Electrical Engineering, Eindhoven University of Technology, Eindhoven, The Netherlands

Poster Index

PP and ODD posters in poster session I: 10:30-11:20
EVEN posters in poster session II: 14:55-15:45

Power Pitch abstracts

Cardiovascular Imaging

Neuroimaging

Poster Index

ODD numbers in poster session I, EVEN numbers in poster session II

Neuroimaging

Body

Poster Index

ODD numbers in poster session I, EVEN numbers in poster session II

Image Reconstruction and Postprocessing

Hardware Development

Poster Index

ODD numbers in poster session I, EVEN numbers in poster session II

Ultra-High Field

P-044 Universal B0 shimming for whole-brain MRI at 7T

P-045 Feasibility of pTx 1H MRI and single transmit 31P MRSI of the prostate at 7T

P-046 Validation method of antenna design for 14T MRI using temperature measurements'

P-047 Diffusion MRI of organoids at 28.2T with 3T/m gradient strength

Low Field

P-048 Evaluating repeatability of in vivo imaging in multiple locations using a portable Halbach-based 46 mT scanner

P-049 Low acoustic noise scanning at 0.6T

P-050 Free-Breathing Functional Lung Imaging at 0.6T compared to 1.5T

P-051 Up to four times accelerated musculoskeletal MRI at 0.4T using the CIRIM-network

P-052 A fluid-sensitive MRI protocol for the small joints of the hand using a portable 46 mT scanner

Simulations and Modeling

P-053 Sylvester Normalizing Flows for Bayesian Inference in MRS

Interventional MRI

P-054 Physics-Driven Needle Tracking for MR-Guided Percutaneous Interventions

P-055 An Extended Reality Interface for Interventional MRI

P-056 Physics-Driven Passive Marker Tracking for MR-Guided Endovascular Interventions

MRI Acquisition

P-057 Deep Learning-Based Quantitative MRI Resolution Enhancement via Clinically Accessible Weighted Images Without High-Resolution Training Data

Poster Index

ODD numbers in poster session I, EVEN numbers in poster session II

MRI Acquisition

Neuro - Diffusion

Neuro - Perfusion

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