


ISMRM 2025 abstracts

GE HealthCare is pleased to announce the following abstracts that were accepted for presentation at the 2025 Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM) scheduled to be held May 10-15 in Honolulu, Hawaii. GE HealthCare continues its commitment to advancing MR imaging through deep-learning-based technologies, novel acquisition techniques and high-performance gradient systems. 

AI/Deep Learning

An Explainable AI-based Motion Detection approach for MR images without requirement of motion annotated ground truth data

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A model-based deep learning (DL) approach for denoising MR images

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Nex2Nex – An unsupervised deep learning method for denoising MR images

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Privacy Preserving Performance Analysis of the AI Model Deployed on the MRI Scanner with Multimodal Vision-Language Feedback

GE HealthCare

Efficient Utilization of Unlabeled Data during Training of Semi-Supervised Learning Model

GE HealthCare

Knowledge-based Labeled Data Selection in Semi-Supervised Learning

GE HealthCare

Deep Learning based Phase Correction and Denoising for accurate ADC quantification

GE HealthCare

Body/Oncology

An Integrated Platform for Tumor Targeting and Thermal Ablation: Improving Efficacy and Efficiency of Percutaneous Liver Cancer Treatment

GE HealthCare

An informed approach for protocol selection for clinical prostate MRI

GE HealthCare

Design and development of a transmit RF coil for large field of view hyperpolarized ^{13}C imaging

GE HealthCare

Advanced ZTE MR Lung Imaging: A Deep Learning Approach to Enhance SNR and Reduce Artifacts

GE HealthCare, Erasmus MC

Assessment of machine learning model performance to differentiate benign and malignant breast lesion: Finding best radiomic features on MDME MRI

GE HealthCare, Ehime University School of Medicine

Impact of Deep Learning denoising and ultra-high density coil array on prostate diffusion imaging

GE HealthCare, University of Chicago

Ultrashort echo-time (UTE) functional lung imaging for fractional ventilation quantification: breath-hold vs. free-breathing

GE HealthCare

Analysis of Deep Learning-based Phase Correction Applied to Single-Shot rFOV Diffusion Images of the Prostate at 1.5T

GE HealthCare, Massachusetts General Hospital

Single-Site Experience of Liver Fat and Iron Quantitation with a 2D Flip Angle Modulated CSE-MRI Sequence in the Clinical Setting

GE HealthCare, University of Wisconsin - Madison, Massachusetts General Hospital

Cardiac

Deep Learning Reconstruction Enhances Whole-Body Diffusion-Weighted Imaging Quality for Multiple Myeloma Detection: A Preliminary Study

GE HealthCare, The First Affiliated Hospital of Soochow University, Kunshan Hospital of Chinese Medicine

Detection of Rectal Gas Induced Artifacts in Diffusion Weighted MR Images

GE HealthCare

Shortening 3D T2-Weighted Breast MRI scan time using deep learning based reconstruction: A phantom and patient reader study

GE HealthCare, University of California San Francisco

Inter-Frame metric-based Auto-Inversion-Time prediction for Cardiac MR

GE HealthCare

Automated prescription of left ventricular outflow tract and aortic valve views with a U-Net model

GE HealthCare, University of California San Diego

Cardiac landmark localization on axial stacks without dedicated ground truth

GE HealthCare

Convolution model for gradient-induced cardiac stimulation risk assessment

GE HealthCare

Core Technology

Enabling a one touch MR patient setup using RIS Interpretation and 3D Camera

GE HealthCare

Healing the Earth: Sustainable Radiology Practices for Environmental and Operational Efficiency

GE HealthCare

GaN HEMT decoupling circuit for MR receive coil

GE HealthCare, Stanford University

Radical-Free Hyperpolarized α -Ketoglutarate: Non-persistent radicals for Dissolution DNP

GE HealthCare, University of California San Francisco

Deep Learning Based Ultrafast and Robust RF Shimming Using Quadrature B1+ Maps

GE HealthCare

E-field Simulation in Human Body Models for High Performance Non-Whole-Body Gradient Coil IEC Cardiac Stimulation Compliance

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dB/dt camera for gradient eddy current mapping outside the magnet

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Benefits and limitations of diffusion imaging at 7T with a high-performance gradient system: a comparative study with 3T

GE HealthCare, West China Hospital

Impact of flexible coil technology for fetal MR imaging: Intraindividual comparison with use of conventional coil

GE HealthCare, Université Paris Cité and AP-HP

Improving Image Resolution in Deuterium Metabolic Imaging with bSSFP for Clinical Translation at 3T

GE HealthCare, Aarhus University

MSK

On The Optimal Readout Trajectory for Hyperpolarised ¹³C Metabolic Imaging

GE HealthCare

An automatic region-based no-reference image quality evaluation method

GE HealthCare, Rey Juan Carlos University

Highly Sensitive Padded Coil Design using AIR Technology for 3T Spine and Body Imaging

GE HealthCare, Hospital for Special Surgery

Compact, Elliptical-Toroid Floating Cable Traps

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Mechanical Resonance Characterization by Gradient System Transfer Function

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Single PD-FSE Knee MR Image Transformation Into Water, Fat and Field Inhomogeneity Images at 0.5T

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1-Click Bone Volume Rendering with ZTE MRI

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2-Minute 3D FSE Knee MRI with 10-fold accelerated Sonic DL – Rapid morphometric and qualitative assessment of Cartilage and Meniscus

GE HealthCare, Rey Juan Carlos University, Clínica CENTRO

Improved Brachial Plexus and C-Spine DTI using Deep Learning-based Phase Correction

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On Memory-Based Interactive Deep Learning Models for Cartilage Segmentation in 3D MRIs of the Knee Joint

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Few-Shot Contrastive Multilabel Localization of Knee MR Images with Self-Supervised Foundation Model

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Localization of Non-Isocentric Wrist Anatomy with Few-shot Foundation Models

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A Universally Sized, High-Resolution and Parallel Imaging Optimized 32-Channel Ultra-flexible Phased-Array for 3T Small Joint MRI

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An automated technique to estimate knee cartilage thickness for femoral, tibial, patellar cartilages and menisci

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Sonic DL Enhanced 3D Double-Echo Steady-State Sequence for Improved Imaging Resolution in Magnetic Resonance Neurography

GE HealthCare

Transformer-based fast image reconstruction for high fidelity MR knee imaging: an evaluation study

GE HealthCare, University of Electronic Science and Technology of China

Neuro

Accelerating High Resolution 3D EPI with Deep Learning Reconstruction

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Imaging at 400 mT/m with next-generation gradient driver technology on a high-performance gradient platform

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Sleeping Under the Looping Star: Identifying BOLD Spectral Correlates of Sleep with Silent fMRI

GE HealthCare, Uniformed Services University, Walter Reed National Military Medical Center, University of Wisconsin - Madison

Assessment of Slow Flow in the Brain using SCIMI and q-aMRI on a High-Performance Gradient System: Comparison of Phase and Magnitude-based Methods

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3D amplified MRI (aMRI) and Dynamic Mode Decomposition (DMD) analysis of ICP-driven cranio-spinal motion

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Human brain high-resolution OGSE diffusion MRI with slice-by-slice B0 shimming in an ultra-high performance gradient 3T MRI system

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3D EPI Performance in Detecting Microhemorrhage, Compared to 2D GRE

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Label-informed Data Augmentation for DBS Optimization: Synthesizing fMRI Maps with SPADE-VAE Network to Improve DBS Parameter Classification

GE HealthCare, University of Toronto, Krembil Brain Institute, CRANIA

BOLD Acquisitions and GAN Synthesized VASO Contrasts for Rapid Layer-dependent fMRI

GE HealthCare, Madras University

Structural and Functional Looping Star MR Neuroimaging at 7T

GE HealthCare, IMAGOT, IRCCS Stella Maris Foundation, University Pisa, University of Florence, Technische Hochschule Ingolstadt, Technical University of Munich

Diffusion-guided MR Brain Tumor Segmentation with Missing Modalities

GE HealthCare, University of Electronic Science and Technology of China

Gradient performance-constrained optimization of OGSE time-dependent diffusion MRI for tissue microstructure imaging

GE HealthCare, Memorial Sloan Kettering Cancer Center, Brigham and Women's Hospital, Walter Reed National Military Medical Center, Uniformed Services University, Stanford University