Els Fieremans

List of Publications by Year
in descending order

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Version: 2024-02-01

85 papers	8,379 citations	94433 37 h-index	74163 75 g-index
89 all docs	89 docs citations	89 times ranked	9146 citing authors

#	Article	IF	Citations
1	Denoising of diffusion MRI using random matrix theory. NeuroImage, 2016, 142, 394-406.	4.2	1,208
2	Clearance systems in the brainâ€”implications for Alzheimer disease. Nature Reviews Neurology, 2015, 11, 457-470.	10.1	1,127
3	Diffusion <scp>MRI</scp> noise mapping using random matrix theory. Magnetic Resonance in Medicine, 2016, 76, 1582-1593.	3.0	541
4	White matter characterization with diffusional kurtosis imaging. NeuroImage, 2011, 58, 177-188.	4.2	479
5	Quantifying brain microstructure with diffusion MRI: Theory and parameter estimation. NMR in Biomedicine, 2019, 32, e3998.	2.8	335
6	Revealing mesoscopic structural universality with diffusion. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 5088-5093.	7.1	266
7	Degeneracy in model parameter estimation for multiâ€compartmental diffusion in neuronal tissue. NMR in Biomedicine, 2016, 29, 33-47.	2.8	252
8	Stroke Assessment With Diffusional Kurtosis Imaging. Stroke, 2012, 43, 2968-2973.	2.0	206
9	Mesoscopic structure of neuronal tracts from time-dependent diffusion. NeuroImage, 2015, 114, 18-37.	4.2	199
10	Random walks with barriers. Nature Physics, 2011, 7, 508-514.	16.7	181
11	Monte Carlo study of a twoâ€compartment exchange model of diffusion. NMR in Biomedicine, 2010, 23, 711-724.	2.8	180
12	One diffusion acquisition and different white matter models: How does microstructure change in human early development based on WMTI and NODDI?. NeuroImage, 2015, 107, 242-256.	4.2	179
13	Obstructive Sleep Apnea Severity Affects Amyloid Burden in Cognitively Normal Elderly. A Longitudinal Study. American Journal of Respiratory and Critical Care Medicine, 2018, 197, 933-943.	5.6	174
14	Rotationally-invariant mapping of scalar and orientational metrics of neuronal microstructure with diffusion MRI. NeuroImage, 2018, 174, 518-538.	4.2	173
15	TE dependent Diffusion Imaging (TEdDI) distinguishes between compartmental T2 relaxation times. NeuroImage, 2018, 182, 360-369.	4.2	160
16	In vivo quantification of demyelination and recovery using compartment-specific diffusion MRI metrics validated by electron microscopy. NeuroImage, 2016, 132, 104-114.	4.2	156
17	In vivo observation and biophysical interpretation of time-dependent diffusion in human white matter. NeuroImage, 2016, 129, 414-427.	4.2	147
18	Noninvasive quantification of axon radii using diffusion MRI. ELife, 2020, 9, .	6.0	137

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19	Evaluation of the accuracy and precision of the diffusion parameter EStImation with Gibbs and NoisE removal pipeline. NeuroImage, 2018, 183, 532-543.	4.2	123
20	Simulation and experimental verification of the diffusion in an anisotropic fiber phantom. Journal of Magnetic Resonance, 2008, 190, 189-199.	2.1	116
21	Quantification of normal-appearing white matter tract integrity in multiple sclerosis: a diffusion kurtosis imaging study. Journal of Neurology, 2016, 263, 1146-1155.	3.6	116
22	On the scaling behavior of water diffusion in human brain white matter. NeuroImage, 2019, 185, 379-387.	4.2	109
23	Gibbs ringing in diffusion MRI. Magnetic Resonance in Medicine, 2016, 76, 301-314.	3.0	108
24	White matter tract integrity metrics reflect the vulnerability of late-myelinating tracts in Alzheimer's disease. NeuroImage: Clinical, 2014, 4, 64-71.	2.7	106
25	Along-axon diameter variation and axonal orientation dispersion revealed with 3D electron microscopy: implications for quantifying brain white matter microstructure with histology and diffusion MRI. Brain Structure and Function, 2019, 224, 1469-1488.	2.3	77
26	Physical and numerical phantoms for the validation of brain microstructural MRI: A cookbook. NeuroImage, 2018, 182, 39-61.	4.2	74
27	Time-dependent diffusion in skeletal muscle with the random permeable barrier model (RPBM): application to normal controls and chronic exertional compartment syndrome patients. NMR in Biomedicine, 2014, 27, 519-528.	2.8	71
28	What dominates the time dependence of diffusion transverse to axons: Intra- or extra-axonal water?. NeuroImage, 2018, 182, 500-510.	4.2	65
29	Assessment of cognitive and neural recovery in survivors of pediatric brain tumors in a pilot clinical trial using metformin. Nature Medicine, 2020, 26, 1285-1294.	30.7	65
30	The design of anisotropic diffusion phantoms for the validation of diffusion weighted magnetic resonance imaging. Physics in Medicine and Biology, 2008, 53, 5405-5419.	3.0	60
31	A time-dependent diffusion MRI signature of axon caliber variations and beading. Communications Biology, 2020, 3, 354.	4.4	60
32	Time-Dependent Diffusion in Prostate Cancer. Investigative Radiology, 2017, 52, 405-411.	6.2	58
33	Connectome 2.0: Developing the next-generation ultra-high gradient strength human MRI scanner for bridging studies of the micro-, meso- and macro-connectome. NeuroImage, 2021, 243, 118530.	4.2	58
34	A resting state fMRI analysis pipeline for pooling inference across diverse cohorts: an ENIGMA rs-fMRI protocol. Brain Imaging and Behavior, 2019, 13, 1453-1467.	2.1	49
35	In vivo observation and biophysical interpretation of time-dependent diffusion in human cortical gray matter. NeuroImage, 2020, 222, 117054.	4.2	48
36	Diffusion MRI biomarkers of white matter microstructure vary nonmonotonically with increasing cerebral amyloid deposition. Neurobiology of Aging, 2020, 89, 118-128.	3.1	48

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37	Comparison of heritability estimates on resting state fMRI connectivity phenotypes using the ENIGMA analysis pipeline. Human Brain Mapping, 2018, 39, 4893-4902.	3.6	45
38	Stimulated echo diffusion tensor imaging and SPAIR T₂â€weighted imaging in chronic exertional compartment syndrome of the lower leg muscles. Journal of Magnetic Resonance Imaging, 2013, 38, 1073-1082.	3.4	44
39	In vivo measurement of membrane permeability and myofiber size in human muscle using timeâ€dependent diffusion tensor imaging and the random permeable barrier model. NMR in Biomedicine, 2017, 30, e3612.	2.8	44
40	Diffusion-weighted imaging uncovers likely sources of processing-speed deficits in schizophrenia. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 13504-13509.	7.1	43
41	N -acetyl-aspartate levels correlate with intra-axonal compartment parameters from diffusion MRI. NeuroImage, 2015, 118, 334-343.	4.2	40
42	Characterization of Prostate Microstructure Using Water Diffusion and NMR Relaxation. Frontiers in Physics, 2018, 6, .	2.1	40
43	The impact of realistic axonal shape on axon diameter estimation using diffusion MRI. NeuroImage, 2020, 223, 117228.	4.2	40
44	Training a neural network for Gibbs and noise removal in diffusion MRI. Magnetic Resonance in Medicine, 2021, 85, 413-428.	3.0	35
45	Multi-parametric quantitative in vivo spinal cord MRI with unified signal readout and image denoising. NeuroImage, 2020, 217, 116884.	4.2	34
46	Nanostructure-specific X-ray tomography reveals myelin levels, integrity and axon orientations in mouse and human nervous tissue. Nature Communications, 2021, 12, 2941.	12.8	33
47	Working Memory And Brain Tissue Microstructure: White Matter Tract Integrity Based On Multi-Shell Diffusion MRI. Scientific Reports, 2018, 8, 3175.	3.3	32
48	White Matter Tract Integrity: An Indicator of Axonal Pathology after Mild Traumatic Brain Injury. Journal of Neurotrauma, 2018, 35, 1015-1020.	3.4	30
49	Miniature pig model of human adolescent brain white matter development. Journal of Neuroscience Methods, 2018, 296, 99-108.	2.5	22
50	Transverse diffusivity of cerebral parenchyma predicts visual tracking performance in relapsingâ€“remitting multiple sclerosis. Brain and Cognition, 2009, 71, 410-415.	1.8	21
51	Quantifying myofiber integrity using diffusion <scp>MRI</scp> and random permeable barrier modeling in skeletal muscle growth and Duchenne muscular dystrophy model in mice. Magnetic Resonance in Medicine, 2018, 80, 2094-2108.	3.0	21
52	Integration of routine QA data into megaâ€analysis may improve quality and sensitivity of multisite diffusion tensor imaging studies. Human Brain Mapping, 2018, 39, 1015-1023.	3.6	20
53	Retrieving neuronal orientations using 3D scanning SAXS and comparison with diffusion MRI. NeuroImage, 2020, 204, 116214.	4.2	20
54	Improved Task-based Functional MRI Language Mapping in Patients with Brain Tumors through Marchenko-Pastur Principal Component Analysis Denoising. Radiology, 2021, 298, 365-373.	7.3	19

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55	Realistic Microstructure Simulator (RMS): Monte Carlo simulations of diffusion in three-dimensional cell segmentations of microscopy images. Journal of Neuroscience Methods, 2021, 350, 109018.	2.5	19
56	MTBI Identification From Diffusion MR Images Using Bag of Adversarial Visual Features. IEEE Transactions on Medical Imaging, 2019, 38, 2545-2555.	8.9	18
57	Palliative CT-Guided Cordotomy for Medically Intractable Pain in Patients with Cancer. American Journal of Neuroradiology, 2017, 38, 387-390.	2.4	17
58	Validation of surfaceâ€toâ€volume ratio measurements derived from oscillating gradient spin echo on a clinical scanner using anisotropic fiber phantoms. NMR in Biomedicine, 2017, 30, e3708.	2.8	16
59	The brain after COVID-19: Compensatory neurogenesis or persistent neuroinflammation?. EClinicalMedicine, 2021, 31, 100684.	7.1	16
60	A simple isotropic phantom for diffusional kurtosis imaging. Magnetic Resonance in Medicine, 2012, 68, 537-542.	3.0	15
61	Altered Relationship between Working Memory and Brain Microstructure after Mild Traumatic Brain Injury. American Journal of Neuroradiology, 2019, 40, 1438-1444.	2.4	15
62	Measurement of cellularâ€interstitial water exchange time in tumors based on diffusionâ€timeâ€dependent diffusional kurtosis imaging. NMR in Biomedicine, 2021, 34, e4496.	2.8	15
63	Reproducibility of the Standard Model of diffusion in white matter on clinical MRI systems. NeuroImage, 2022, 257, 119290.	4.2	15
64	Genomic kinship construction to enhance genetic analyses in the human connectome project data. Human Brain Mapping, 2019, 40, 1677-1688.	3.6	14
65	Effect of intravoxel incoherent motion on diffusion parameters in normal brain. NeuroImage, 2020, 204, 116228.	4.2	14
66	Callosal function in MS patients with mild and severe callosal damage as reflected by diffusion tensor imaging. Brain Research, 2008, 1226, 218-225.	2.2	13
67	Observation of structural universality in disordered systems using bulk diffusion measurement. Physical Review E, 2017, 96, 061101.	2.1	13
68	Removal of partial Fourierâ€induced Gibbs (RPG) ringing artifacts in MRI. Magnetic Resonance in Medicine, 2021, 86, 2733-2750.	3.0	12
69	POSTPROCESSING OF BRAIN WHITE MATTER FIBER ORIENTATION DISTRIBUTION FUNCTIONS. , 2007, , .		8
70	Diffusional kurtosis imaging in hydrocephalus. Magnetic Resonance Imaging, 2015, 33, 531-536.	1.8	8
71	Lipid Metabolism, Abdominal Adiposity, and Cerebral Health in the Amish. Obesity, 2017, 25, 1876-1880.	3.0	8
72	A Deep Unsupervised Learning Approach Toward MTBI Identification Using Diffusion MRI. , 2018, 2018, 1267-1270.		8

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73	Identifying mild traumatic brain injury patients from MR images using bag of visual words. , 2017, , .		7
74	Obstructive Sleep Apnea and Hypertension with Longitudinal Amyloid-Î² Burden and Cognitive Changes. American Journal of Respiratory and Critical Care Medicine, 2022, 206, 632-636.	5.6	7
75	Diffusion Kurtosis Imaging Reveals Optic Tract Damage That Correlates with Clinical Severity in Glaucoma. , 2020, 2020, 1746-1749.		5
76	Assessment of myofiber microstructure changes due to atrophy and recovery with timeâ€dependent diffusion MRI. NMR in Biomedicine, 2021, 34, e4534.	2.8	5
77	Diffusional Kurtosis along the Corticospinal Tract in Adult Normal Pressure Hydrocephalus. American Journal of Neuroradiology, 2018, 39, 2218-2223.	2.4	4
78	Simultaneous Multislice for Accelerating Diffusion MRI in Clinical Neuroradiology Protocols. American Journal of Neuroradiology, 2021, 42, 1437-1443.	2.4	4
79	Validation of models for the diffusion weighted MR signal in brain white matter. , 2008, , .		1
80	Identification of Relevant Diffusion MRI Metrics Impacting Cognitive Functions Using a Novel Feature Selection Method. , 2019, , .		1
81	Impact of MRâ€guided PET reconstruction on tau detection and quantification with [18 F]â€MKâ€6240. Alzheimer's and Dementia, 2020, 16, e037977.	0.8	1
82	SIMULATION OF THE DIFFUSION IN THE INTERSTITIAL SPACE OF A FIBER PHANTOM. , 2007, , .		0
83	Differentiating high and low grade pediatric brain tumors using diffusional kurtosis imaging. Journal of Pediatric Neuroradiology, 2015, 02, 301-305.	0.1	0
84	P2â€266: Early Versus Late Changes in White Matter Microstructure with Increasing Amyloid Deposition. Alzheimer's and Dementia, 2016, 12, P729.	0.8	0
85	Multi-shell diffusion MR imaging and brain microstructure after mild traumatic brain injury: A focus on working memory. , 2022, , 393-403.		0