Tobias Knopp

List of Publications by Year
in descending order

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Version: 2024-02-01

155	4,050	117453	138251
papers	citations	34 h-index	58 g-index

166	166	166	2084
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Comparison of Deep Learning Approaches for Multi-Label Chest X-Ray Classification. Scientific Reports, 2019, 9, 6381.	1.6	260
2	Magnetization response spectroscopy of superparamagnetic nanoparticles for magnetic particle imaging. Journal Physics D: Applied Physics, 2009, 42, 205007.	1.3	197
3	Human-sized magnetic particle imaging for brain applications. Nature Communications, 2019, 10, 1936.	5.8	186
4	Trajectory analysis for magnetic particle imaging. Physics in Medicine and Biology, 2009, 54, 385-397.	1.6	147
5	Weighted iterative reconstruction for magnetic particle imaging. Physics in Medicine and Biology, 2010, 55, 1577-1589.	1.6	142
6	Magnetic Particle Imaging for Real-Time Perfusion Imaging in Acute Stroke. ACS Nano, 2017, 11, 10480-10488.	7.3	142
7	Magnetic particle imaging: from proof of principle to preclinical applications. Physics in Medicine and Biology, 2017, 62, R124-R178.	1.6	139
8	Model-Based Reconstruction for Magnetic Particle Imaging. IEEE Transactions on Medical Imaging, 2010, 29, 12-18.	5.4	133
9	Single-sided device for magnetic particle imaging. Journal Physics D: Applied Physics, 2009, 42, 022001.	1.3	116
10	Magnetic Particle Imaging. , 2012, , .		96
11	Towards Picogram Detection of Superparamagnetic Iron-Oxide Particles Using a Gradiometric Receive Coil. Scientific Reports, 2017, 7, 6872.	1.6	95
12	A new extension for kâ€“ turbulence models to account for wall roughness. International Journal of Heat and Fluid Flow, 2009, 30, 54-65.	1.1	94
13	2D modelâ€based reconstruction for magnetic particle imaging. Medical Physics, 2010, 37, 485-491.	1.6	82
14	Prediction of the Spatial Resolution of Magnetic Particle Imaging Using the Modulation Transfer Function of the Imaging Process. IEEE Transactions on Medical Imaging, 2011, 30, 1284-1292.	5.4	80
15	A grid and flow adaptive wall-function method for RANS turbulence modelling. Journal of Computational Physics, 2006, 220, 19-40.	1.9	78
16	Magnetic Particle / Magnetic Resonance Imaging: In-Vitro MPI-Guided Real Time Catheter Tracking and 4D Angioplasty Using a Road Map and Blood Pool Tracer Approach. PLoS ONE, 2016, 11, e0156899.	1.1	74
17	A Note on the Iterative MRI Reconstruction from Nonuniformk-Space Data. International Journal of Biomedical Imaging, 2007, 2007, 1-9.	3.0	68
18	Sensitivity Enhancement in Magnetic Particle Imaging by Background Subtraction. IEEE Transactions on Medical Imaging, 2016, 35, 893-900.	5.4	58

#	Article	IF	Citations
19	On the formulation of the image reconstruction problem in magnetic particle imaging. Biomedizinische Technik, 2013, 58, 583-91.	0.9	53
20	Edge Preserving and Noise Reducing Reconstruction for Magnetic Particle Imaging. IEEE Transactions on Medical Imaging, 2017, 36, 74-85.	5.4	53
21	Magnetic Particle Imaging for High Temporal Resolution Assessment of Aneurysm Hemodynamics. PLoS ONE, 2016, 11, e0160097.	1.1	51
22	Analog receive signal processing for magnetic particle imaging. Medical Physics, 2013, 40, 042303.	1.6	50
23	Online reconstruction of 3D magnetic particle imaging data. Physics in Medicine and Biology, 2016, 61, N257-N267.	1.6	48
24	Monitoring Intracranial Cerebral Hemorrhage Using Multicontrast Real-Time Magnetic Particle Imaging. ACS Nano, 2020, 14, 13913-13923.	7.3	47
25	Increasing the sensitivity for stem cell monitoring in system-function based magnetic particle imaging. Physics in Medicine and Biology, 2016, 61, 3279-3290.	1.6	46
26	Sparse Reconstruction of the Magnetic Particle Imaging System Matrix. IEEE Transactions on Medical Imaging, 2013, 32, 1473-1480.	5.4	44
27	Joint reconstruction of non-overlapping magnetic particle imaging focus-field data. Physics in Medicine and Biology, 2015, 60, L15-L21.	1.6	44
28	Artifact free reconstruction with the system matrix approach by overscanning the field-free-point trajectory in magnetic particle imaging. Physics in Medicine and Biology, 2016, 61, 475-487.	1.6	43
29	Efficient generation of a magnetic fieldâ€free line. Medical Physics, 2010, 37, 3538-3540.	1.6	42
30	Toward cardiovascular interventions guided by magnetic particle imaging: First instrument characterization. Magnetic Resonance in Medicine, 2013, 69, 1761-1767.	1.9	42
31	Field-free line formation in a magnetic field. Journal of Physics A: Mathematical and Theoretical, 2010, 43, 012002.	0.7	40
32	Magnetic particle imaging forin vivoblood flow velocity measurements in mice. Physics in Medicine and Biology, 2018, 63, 064001.	1.6	39
33	Viscosity quantification using multi-contrast magnetic particle imaging. New Journal of Physics, 2018, 20, 083001.	1.2	39
34	Field Inhomogeneity Correction Based on Gridding Reconstruction for Magnetic Resonance Imaging. IEEE Transactions on Medical Imaging, 2007, 26, 374-384.	5.4	37
35	In vitroandin vivocomparison of a tailored magnetic particle imaging blood pool tracer with Resovist. Physics in Medicine and Biology, 2017, 62, 3454-3469.	1.6	36
36	Combined Preclinical Magnetic Particle Imaging andÂMagnetic Resonance Imaging: Initial Results inÂMice. RoFo Fortschritte Auf Dem Gebiet Der Rontgenstrahlen Und Der Bildgebenden Verfahren, 2015, 187, 347-352.	0.7	35

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37	Smart chest X-ray worklist prioritization using artificial intelligence: a clinical workflow simulation. European Radiology, 2021, 31, 3837-3845.	2.3	35
38	A Fourier slice theorem for magnetic particle imaging using a field-free line. Inverse Problems, 2011, 27, 095004.	1.0	33
39	Hybrid system calibration for multidimensional magnetic particle imaging. Physics in Medicine and Biology, 2017, 62, 3392-3406.	1.6	33
40	Simultaneous Magnetic Particle Imaging and Navigation of large superparamagnetic nanoparticles in bifurcation flow experiments. Journal of Magnetism and Magnetic Materials, 2020, 498, 166206.	1.0	33
41	Experimental generation of an arbitrarily rotated fieldâ€free line for the use in magnetic particle imaging. Medical Physics, 2011, 38, 5200-5207.	1.6	31
42	Visualization of spatial and temporal temperature distributions with magnetic particle imaging for liver tumor ablation therapy. Scientific Reports, 2020, 10, 7480.	1.6	31
43	Experimental Investigation of the Log-Law for an Adverse Pressure Gradient Turbulent Boundary Layer Flow at Re Î¸ â€‰=â€‰10000. Flow, Turbulence and Combustion, 2014, 92, 451-471.	1.4	28
44	Investigation of scaling laws in a turbulent boundary layer flow with adverse pressure gradient using PIV. Journal of Turbulence, 2015, 16, 250-272.	0.5	28
45	Generation of a static magnetic field-free line using two Maxwell coil pairs. Applied Physics Letters, 2010, 97, 092505.	1.5	26
46	Non-Equispaced System Matrix Acquisition for Magnetic Particle Imaging Based on Lissajous Node Points. IEEE Transactions on Medical Imaging, 2016, 35, 2476-2485.	5.4	26
47	OpenMPIData: An initiative for freely accessible magnetic particle imaging data. Data in Brief, 2020, 28, 104971.	0.5	26
48	Development of long circulating magnetic particle imaging tracers: use of novel magnetic nanoparticles and entrapment into human erythrocytes. Nanomedicine, 2020, 15, 739-753.	1.7	26
49	First magnetic particle imaging angiography in human-sized organs by employing a multimodal ex vivo pig kidney perfusion system. Physiological Measurement, 2019, 40, 105002.	1.2	25
50	Efficient Joint Image Reconstruction of Multi-Patch Data Reusing a Single System Matrix in Magnetic Particle Imaging. IEEE Transactions on Medical Imaging, 2019, 38, 932-944.	5.4	24
51	First experimental comparison between the Cartesian and the Lissajous trajectory for magnetic particle imaging. Physics in Medicine and Biology, 2017, 62, 3407-3421.	1.6	23
52	Design of a head coil for high resolution mouse brain perfusion imaging using magnetic particle imaging. Physics in Medicine and Biology, 2020, 65, 235007.	1.6	22
53	Singular value analysis for Magnetic Particle Imaging. , 2008, , .		21
54	Iterative Off-Resonance and Signal Decay Estimation and Correction for Multi-Echo MRI. IEEE Transactions on Medical Imaging, 2009, 28, 394-404.	5.4	21

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55	In vivoliver visualizations with magnetic particle imaging based on the calibration measurement approach. Physics in Medicine and Biology, 2017, 62, 3470-3482.	1.6	19
56	Discriminating nanoparticle core size using multi-contrast MPI. Physics in Medicine and Biology, 2019, 64, 074001.	1.6	19
57	Using data redundancy gained by patch overlaps to reduce truncation artifacts in magnetic particle imaging. Physics in Medicine and Biology, 2016, 61, 4583-4598.	1.6	18
58	Direct Image Reconstruction of Lissajous-Type Magnetic Particle Imaging Data Using Chebyshev-Based Matrix Compression. IEEE Transactions on Computational Imaging, 2017, 3, 671-681.	2.6	18
59	Experimental analysis of the log law at adverse pressure gradient. Journal of Fluid Mechanics, 2021, 918, .	1.4	18
60	Local System Matrix Compression for Efficient Reconstruction in Magnetic Particle Imaging. Advances in Mathematical Physics, 2015, 2015, 1-7.	0.4	17
61	Simultaneous imaging of widely differing particle concentrations in MPI: problem statement and algorithmic proposal for improvement. Physics in Medicine and Biology, 2021, 66, 095004.	1.6	17
62	Reconstruction of the Magnetic Particle Imaging System Matrix Using Symmetries and Compressed Sensing. Advances in Mathematical Physics, 2015, 2015, 1-9.	0.4	16
63	Influence of deformable image registration on 4D dose simulation for extracranial SBRT: A multi-registration framework study. Radiotherapy and Oncology, 2018, 127, 225-232.	0.3	16
64	Geometry planning and image registration in magnetic particle imaging using bimodal fiducial markers. Medical Physics, 2016, 43, 2884-2893.	1.6	15
65	MRIReco.jl: An MRI reconstruction framework written in Julia. Magnetic Resonance in Medicine, 2021, 86, 1633-1646.	1.9	15
66	A Spectrometer for Magnetic Particle Imaging. IFMBE Proceedings, 2009, , 2313-2316.	0.2	15
67	Using Low-Rank Tensors for the Recovery of MPI System Matrices. IEEE Transactions on Computational Imaging, 2020, 6, 1389-1402.	2.6	14
68	3d-SMRnet: Achieving a New Quality ofÂMPIÂSystemÂMatrixÂRecovery byÂDeepÂLearning. Lecture Notes in Computer Science, 2020, , 74-82.	1.0	13
69	Preparation and Characterization of Dextran-Covered Fe3O4 Nanoparticles for Magnetic Particle Imaging. IFMBE Proceedings, 2009, , 2343-2346.	0.2	12
70	Towards accurate modeling of the multidimensional magnetic particle imaging physics. New Journal of Physics, 2019, 21, 103032.	1.2	12
71	A waveletâ€based sparse rowâ€action method for image reconstruction in magnetic particle imaging. Medical Physics, 2021, 48, 3893-3903.	1.6	12
72	Efficient Magnetic Gradient Field Generation With Arbitrary Axial Displacement for Magnetic Particle Imaging. IEEE Magnetics Letters, 2012, 3, 6500104-6500104.	0.6	11

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73	Efficient gradient field generation providing a multi-dimensional arbitrary shifted field-free point for magnetic particle imaging. Journal of Applied Physics, 2014, 115, .	1.1	11
74	Symmetries of the 2D magnetic particle imaging system matrix. Physics in Medicine and Biology, 2015, 60, 4033-4044.	1.6	11
75	Recent progress in magnetic particle imaging: from hardware to preclinical applications. Physics in Medicine and Biology, 2017, 62, E4-E7.	1.6	11
76	Magnetic particle imaging for assessment of cerebral perfusion and ischemia. Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology, 2022, 14, e1757.	3.3	11
77	Particle interactions and their effect on magnetic particle spectroscopy and imaging. Nanoscale, 2022, 14, 7163-7173.	2.8	11
78	Fast multiresolution data acquisition for magnetic particle imaging using adaptive feature detection. Medical Physics, 2017, 44, 6456-6460.	1.6	10
79	When Does Bone Suppression And Lung Field Segmentation Improve Chest X-Ray Disease Classification?. , 2019, , .		10
80	Correction of linear system drifts in magnetic particle imaging. Physics in Medicine and Biology, 2019, 64, 125013.	1.6	10
81	Evaluation of surrogate data quality in sinogram-based CT metal-artifact reduction. Proceedings of SPIE, 2008, , .	0.8	9
82	1D-image reconstruction for magnetic particle imaging using a hybrid system function. , 2011, , .		9
83	Compressed Sensing of the System Matrix and Sparse Reconstruction of the Particle Concentration in Magnetic Particle Imaging. IEEE Transactions on Magnetics, 2015, 51, 1-4.	1.2	9
84	Detection and Compensation of Periodic Motion in Magnetic Particle Imaging. IEEE Transactions on Medical Imaging, 2017, 36, 1511-1521.	5.4	9
85	Efficient Joint Estimation of Tracer Distribution and Background Signals in Magnetic Particle Imaging Using a Dictionary Approach. IEEE Transactions on Medical Imaging, 2021, 40, 3568-3579.	5.4	9
86	Mathematical analysis of the 1D model and reconstruction schemes for magnetic particle imaging. Inverse Problems, 2018, 34, 055012.	1.0	8
87	Combining Direct 3D Volume Rendering and Magnetic Particle Imaging to Advance Radiation-Free Real-Time 3D Guidance of Vascular Interventions. CardioVascular and Interventional Radiology, 2020, 43, 322-330.	0.9	8
88	Suppression of Motion Artifacts Caused by Temporally Recurring Tracer Distributions in Multi-Patch Magnetic Particle Imaging. IEEE Transactions on Medical Imaging, 2020, 39, 3548-3558.	5.4	8
89	Simulation of Wing Stall. , 2013, , .		7
90	Effiziente Rekonstruktion und alternative Spulentopologien fÃ¼r Magnetic-Particle-Imaging. , 2011, , .		7

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91	Moving table magnetic particle imaging: a stepwise approach preserving high spatio-temporal resolution. Journal of Medical Imaging, 2018, 5, 1.	0.8	7
92	3D Printed Anatomical Model of a Rat for Medical Imaging. Current Directions in Biomedical Engineering, 2019, 5, 187-190.	0.2	6
93	Modeling the magnetization dynamics for large ensembles of immobilized magnetic nanoparticles in multi-dimensional magnetic particle imaging. Journal of Magnetism and Magnetic Materials, 2022, 543, 168534.	1.0	6
94	Analysis of the influence of imaging-related uncertainties on cerebral aneurysm deformation quantification using a no-deformation physical flow phantom. Scientific Reports, 2018, 8, 11004.	1.6	5
95	Imaging and moving magnetic beads with magnetic particle imaging for targeted drug delivery. , 2018, , .		5
96	Simulating magnetization dynamics of large ensembles of single domain nanoparticles: Numerical study of Brown/NÃ©el dynamics and parameter identification problems in magnetic particle imaging. Journal of Magnetism and Magnetic Materials, 2022, 541, 168508.	1.0	5
97	System Matrix Based Reconstruction for Pulsed Sequences in Magnetic Particle Imaging. IEEE Transactions on Medical Imaging, 2022, 41, 1862-1873.	5.4	5
98	Limitations of measurement-based system functions in magnetic particle imaging. , 2010, , .		4
99	Bimodal intravascular volumetric imaging combining OCT and MPI. Medical Physics, 2019, 46, 1371-1383.	1.6	4
100	In-Vitro MPI-guided IVOCT catheter tracking in real time for motion artifact compensation. PLoS ONE, 2020, 15, e0230821.	1.1	4
101	RESOLUTION DISTRIBUTION IN SINGLE-SIDED MAGNETIC PARTICLE IMAGING. , 2010, , .		4
102	MPIFiles.jl: A Julia Package for Magnetic Particle Imaging Files. Journal of Open Source Software, 2019, 4, 1331.	2.0	4
103	First Dedicated Balloon Catheter for Magnetic Particle Imaging. IEEE Transactions on Medical Imaging, 2022, 41, 3301-3308.	5.4	4
104	SENTINEL LYMPHNODE DETECTION IN BREAST CANCER BY MAGNETIC PARTICLE IMAGING USING SUPERPARAMAGNETIC NANOPARTICLES. , 2010, , .		3
105	A SPECTROMETER TO MEASURE THE USABILITY OF NANOPARTICLES FOR MAGNETIC PARTICLE IMAGING. , 2010, , .		3
106	Single-sided magnetic particle imaging device for the sentinel lymph node biopsy scenario. , 2012, , .		3
107	Enhancing the efficiency of a field free line scanning device for magnetic particle imaging. , 2012, , .		3
108	Chimera technique for transporting disturbances. International Journal for Numerical Methods in Fluids, 2012, 70, 1558-1572.	0.9	3

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109	Experimental Multi-threading Support for the Julia Programming Language. , 2014, , .		3
110	A Wind Tunnel Experiment for Symmetric Wakes in Adverse Pressure Gradients. , 2019, , .		3
111	Toward employing the full potential of magnetic particle imaging: exploring visualization techniques and clinical use cases for real-time 3D vascular imaging. , 2019, , .		3
112	Signal separation in magnetic particle imaging. , 2012, , .		2
113	Recovery of the magnetic particle imaging system matrix using compressed sensing reconstruction. , 2013, , .		2
114	MPI as high temporal resolution imaging technique for in vivo bolus tracking of Ferucarbotran in mouse model. , 2016, , .		2
115	Hybrid RANS/LES Study of the Development of an Airfoil-Generated Vortex. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2016, , 41-54.	0.2	2
116	Estimation of Magnetic Nanoparticle Diameter with a Magnetic Particle Spectrometer. IFMBE Proceedings, 2009, , 61-64.	0.2	1
117	Weighted iterative reconstruction for magnetic particle imaging. Physics in Medicine and Biology, 2010, 55, 2427-2427.	1.6	1
118	SUPERPARAMAGNETIC IRON OXIDE NANOPARTICLES FOR MAGNETIC PARTICLE IMAGING. , 2010, , .		1
119	Novel hardware developments in magnetic particle imaging. , 2011, , .		1
120	Prior to Reconstruction â€“ The System Function. , 2012, , 97-125.		1
121	How to Build an MPI Scanner. , 2012, , 71-95.		1
122	MPI focus field experiments using non-overlapping focus-field patches. , 2015, , .		1
123	Analyzing dynamic processes from the raw magnetic particle measurement signal. , 2015, , .		1
124	Experimental Investigation of a Turbulent Boundary Layer Subject to an Adverse Pressure Gradient at $$Re_{heta }$$ R e l¸upÂto 10000 Using Large-Scale and Long-Range Microscopic Particle Imaging. ERCOFTAC Series, 2016, , 271-281.	0.1	1
125	A new cerebral vessel benchmark dataset (CAPUT) for validation of image-based aneurysm deformation estimation algorithms. Scientific Reports, 2018, 8, 15999.	1.6	1
126	Towards bimodal intravascular OCT MPI volumetric imaging. , 2018, , .		1

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127	Enlarging the field of view in magnetic particle imaging using a moving table approach. , 2018, , .		1
128	Receive coil array for magnetic particle imaging. , 2011, , .		0
129	From Data to Images: Reconstruction. , 2012, , 127-148.		0
130	How Magnetic Particle Imaging Works. , 2012, , 11-70.		0
131	Exploiting the symmetry of the magnetic particle imaging system matrix. , 2013, , .		0
132	Cancellation techniques for MPI. , 2013, , .		0
133	Chebyshev reconstruction of measured 1D magnetic particle imaging data. , 2015, , .		0
134	Local compression of the magnetic particle imaging system matrix for efficient image reconstruction. , 2015, , .		0
135	Combined in vivo magnetic particle imaging and in vivo magnetic resonance imaging in mouse. , 2015, , .		0
136	Investigation of the Law-of-the-Wall for a Turbulent Boundary Layer Flow Subject to an Adverse Pressure Gradient Using Particle Imaging. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2016, , 177-187.	0.2	0
137	Compensation of periodic motion for averaging of magnetic particle imaging data. , 2016, , .		0
138	Dictionary-Based Background Signal Estimation For Magnetic Particle Imaging. , 2021, , .		0
139	Efficient Optimization Of Mri Sampling Patterns Using The Bayesian Fisher Information Matrix. , 2021, , .		0
140	Trajektoriendichte bei Magnetic Particle Imaging. Informatik Aktuell, 2009, , 71-75.	0.4	0
141	CT-MAR Reconstruction Using Non-Uniform Fourier Transform. IFMBE Proceedings, 2009, , 861-865.	0.2	0
142	Application of a New Roughness Extension for k â^' Ï‰ Turbulence Models. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2010, , 43-50.	0.2	0
143	EFFICIENT FIELD-FREE LINE GENERATION FOR MAGNETIC PARTICLE IMAGING. , 2010, , .		0
144	CURRENT IRON OXIDE NANOPARTICLES: IMPACT ON MRI AND MPI. , 2010, , .		0

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145	A SURVEILLANCE UNIT FOR MAGNETIC PARTICLE IMAGING SYSTEMS. , 2010, , .		0
146	Experimentelle Validierung des Konzeptes einer feldfreie Linie fÃ¼r Magnetic-Particle-Imaging anhand von Magnetfeldmessungen. Informatik Aktuell, 2011, , 334-338.	0.4	0
147	Special System Topologies. , 2012, , 149-170.		0
148	Multithreading-Support fÃ¼r die Programmiersprache Julia. Informatik Aktuell, 2015, , 383-388.	0.4	0
149	Geometrieplanung und Bildregistrierung mittels bimodaler Fiducial-Marker fÃ¼r Magnetic Particle Imaging. Informatik Aktuell, 2016, , 128-133.	0.4	0
150	Magnetic-Particle-Imaging mit mehreren GradientenstÃrken. Informatik Aktuell, 2018, , 373-373.	0.4	0
151	Estimating the Spatial Orientation of Immobilized Magnetic Nanoparticles with Parallel-Aligned Easy Axes. Physical Review Applied, 2021, 16, .	1.5	0
152	In-Vitro MPI-guided IVOCT catheter tracking in real time for motion artifact compensation. , 2020, 15, e0230821.		0
153	In-Vitro MPI-guided IVOCT catheter tracking in real time for motion artifact compensation. , 2020, 15, e0230821.		0
154	In-Vitro MPI-guided IVOCT catheter tracking in real time for motion artifact compensation. , 2020, 15, e0230821.		0
155	In-Vitro MPI-guided IVOCT catheter tracking in real time for motion artifact compensation. , 2020, 15, e0230821.		0