Axel Thielscher

List of Publications by Year
in descending order

125 papers	9,319 citations	61984 43 h-index	51608 86 g-index
148 all docs	148 docs citations	148 times ranked	7327 citing authors

#	Article	IF	Citations
1	Simultaneous PET-MRI: a new approach for functional and morphological imaging. Nature Medicine, 2008, 14, 459-465.	30.7	1,008
2	Determinants of the electric field during transcranial direct current stimulation. NeuroImage, 2015, 109, 140-150.	4.2	529
3	Field modeling for transcranial magnetic stimulation: A useful tool to understand the physiological effects of TMS?. , 2015, 2015, 222-5.		454
4	Motor thresholds in humans: a transcranial magnetic stimulation study comparing different pulse waveforms, current directions and stimulator types. Clinical Neurophysiology, 2001, 112, 250-258.	1.5	367
5	Electric field calculations in brain stimulation based on finite elements: An optimized processing pipeline for the generation and usage of accurate individual head models. Human Brain Mapping, 2013, 34, 923-935.	3.6	353
6	Impact of the gyral geometry on the electric field induced by transcranial magnetic stimulation. NeuroImage, 2011, 54, 234-243.	4.2	351
7	How the brain tissue shapes the electric field induced by transcranial magnetic stimulation. NeuroImage, 2011, 58, 849-859.	4.2	291
8	Combining non-invasive transcranial brain stimulation with neuroimaging and electrophysiology: Current approaches and future perspectives. NeuroImage, 2016, 140, 4-19.	4.2	271
9	Spatiotemporal structure of intracranial electric fields induced by transcranial electric stimulation in humans and nonhuman primates. Scientific Reports, 2016, 6, 31236.	3.3	256
10	The non-transcranial TMS-evoked potential is an inherent source of ambiguity in TMS-EEG studies. NeuroImage, 2019, 185, 300-312.	4.2	246
11	Electric field properties of two commercial figure-8 coils in TMS: calculation of focality and efficiency. Clinical Neurophysiology, 2004, 115, 1697-1708.	1.5	244
12	Linking Physics with Physiology in TMS: A Sphere Field Model to Determine the Cortical Stimulation Site in TMS. NeuroImage, 2002, 17, 1117-1130.	4.2	216
13	On the importance of electrode parameters for shaping electric field patterns generated by tDCS. NeuroImage, 2015, 120, 25-35.	4.2	212
14	Automatic skull segmentation from MR images for realistic volume conductor models of the head: Assessment of the state-of-the-art. NeuroImage, 2018, 174, 587-598.	4.2	198
15	The navigation of transcranial magnetic stimulation. Psychiatry Research - Neuroimaging, 2001, 108, 123-131.	1.8	156
16	Neural Correlates of Perceptual Choice and Decision Making during Fear-Disgust Discrimination. Journal of Neuroscience, 2007, 27, 2908-2917.	3.6	153
17	Transcranial magnetic stimulation of the brain: What is stimulated? â€“ A consensus and critical position paper. Clinical Neurophysiology, 2022, 140, 59-97.	1.5	124
18	SimNIBS 2.1: A Comprehensive Pipeline for Individualized Electric Field Modelling for Transcranial Brain Stimulation. , 2019, , 3-25.		115

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19	A novel approach to localize cortical TMS effects. NeuroImage, 2020, 209, 116486.	4.2	112
20	Where does TMS Stimulate the Motor Cortex? Combining Electrophysiological Measurements and Realistic Field Estimates to Reveal the Affected Cortex Position. Cerebral Cortex, 2017, 27, 5083-5094.	2.9	110
21	Disrupting Parietal Function Prolongs Dominance Durations in Binocular Rivalry. Current Biology, 2010, 20, 2106-2111.	3.9	102
22	Towards precise brain stimulation: Is electric field simulation related to neuromodulation?. Brain Stimulation, 2019, 12, 1159-1168.	1.6	99
23	A principled approach to conductivity uncertainty analysis in electric field calculations. NeuroImage, 2019, 188, 821-834.	4.2	96
24	Electric field simulations for transcranial brain stimulation using FEM: an efficient implementation and error analysis. Journal of Neural Engineering, 2019, 16, 066032.	3.5	95
25	How to target inter-regional phase synchronization with dual-site Transcranial Alternating Current Stimulation. NeuroImage, 2017, 163, 68-80.	4.2	94
26	Bringing transcranial mapping into shape: Sulcus-aligned mapping captures motor somatotopy in human primary motor hand area. NeuroImage, 2015, 120, 164-175.	4.2	90
27	On the importance of precise electrode placement for targeted transcranial electric stimulation. NeuroImage, 2018, 181, 560-567.	4.2	87
28	Safety of transcranial focused ultrasound stimulation: A systematic review of the state of knowledge from both human and animal studies. Brain Stimulation, 2019, 12, 1367-1380.	1.6	86
29	Accuracy of Stereotaxic Positioning of Transcranial Magnetic Stimulation. Brain Topography, 2005, 17, 253-259.	1.8	84
30	The impact of large structural brain changes in chronic stroke patients on the electric field caused by transcranial brain stimulation. NeuroImage: Clinical, 2017, 15, 106-117.	2.7	84
31	Transcranial brain stimulation: closing the loop between brain and stimulation. Current Opinion in Neurology, 2016, 29, 397-404.	3.6	83
32	Guidelines for TMS/tES clinical services and research through the COVID-19 pandemic. Brain Stimulation, 2020, 13, 1124-1149.	1.6	78
33	Spatial congruence of neuronavigated transcranial magnetic stimulation and functional neuroimaging. Clinical Neurophysiology, 2002, 113, 462-468.	1.5	75
34	Accurate and robust whole-head segmentation from magnetic resonance images for individualized head modeling. NeuroImage, 2020, 219, 117044.	4.2	73
35	Blinding is compromised for transcranial direct current stimulation at 1Â<scp>mA</scp> for 20Âmin in young healthy adults. European Journal of Neuroscience, 2019, 50, 3261-3268.	2.6	70
36	A Review on Tumor-Treating Fields (TTFields): Clinical Implications Inferred From Computational Modeling. IEEE Reviews in Biomedical Engineering, 2018, 11, 195-207.	18.0	69

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37	Accessibility of cortical regions to focal TES: Dependence on spatial position, safety, and practical constraints. NeuroImage, 2019, 203, 116183.	4.2	67
38	Cholinergic enhancement of episodic memory in healthy young adults. Psychopharmacology, 2005, 182, 170-179.	3.1	62
39	Effects of transcranial direct current stimulation for treating depression: A modeling study. Journal of Affective Disorders, 2018, 234, 164-173.	4.1	59
40	Inter-individual and age-dependent variability in simulated electric fields induced by conventional transcranial electrical stimulation. NeuroImage, 2021, 224, 117413.	4.2	56
41	Concurrent TMS-fMRI for causal network perturbation and proof of target engagement. NeuroImage, 2021, 237, 118093.	4.2	56
42	The neural mechanisms of reliability weighted integration of shape information from vision and touch. NeuroImage, 2012, 60, 1063-1072.	4.2	53
43	Assessment of MR compatibility of a PET insert developed for simultaneous multiparametric PET/MR imaging on an animal system operating at 7 T. Magnetic Resonance in Medicine, 2011, 65, 269-279.	3.0	52
44	Contributions of the PPC to Online Control of Visually Guided Reaching Movements Assessed with fMRI-Guided TMS. Cerebral Cortex, 2011, 21, 1602-1612.	2.9	51
45	Neural mechanisms of corticoâ€“cortical interaction in texture boundary detection: a modeling approach. Neuroscience, 2003, 122, 921-939.	2.3	50
46	Concurrent TMS-fMRI Reveals Interactions between Dorsal and Ventral Attentional Systems. Journal of Neuroscience, 2015, 35, 11445-11457.	3.6	50
47	Modeling the effects of noninvasive transcranial brain stimulation at the biophysical, network, and cognitive Level. Progress in Brain Research, 2015, 222, 261-287.	1.4	49
48	Age-dependent effects of brain stimulation on network centrality. NeuroImage, 2018, 176, 71-82.	4.2	48
49	Can Transcranial Electrical Stimulation Localize Brain Function?. Frontiers in Psychology, 2019, 10, 213.	2.1	48
50	New coil positioning method for interleaved transcranial magnetic stimulation (TMS)/functional MRI (fMRI) and its validation in a motor cortex study. Journal of Magnetic Resonance Imaging, 2009, 29, 189-197.	3.4	47
51	A key region in the human parietal cortex for processing proprioceptive hand feedback during reaching movements. NeuroImage, 2014, 84, 615-625.	4.2	47
52	Centre-surround organization of fast sensorimotor integration in human motor hand area. NeuroImage, 2017, 158, 37-47.	4.2	47
53	Transcranial focused ultrasound stimulation with high spatial resolution. Brain Stimulation, 2021, 14, 290-300.	1.6	47
54	Evaluation of a Modified High-Definition Electrode Montage for Transcranial Alternating Current Stimulation (tACS) of Pre-Central Areas. Brain Stimulation, 2016, 9, 700-704.	1.6	46

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55	Seeing the hand while reaching speeds up onâ€line responses to a sudden change in target position. Journal of Physiology, 2009, 587, 4605-4616.	2.9	44
56	Effects of transcranial magnetic stimulation on visual evoked potentials in a visual suppression task. NeuroImage, 2011, 54, 1375-1384.	4.2	44
57	Human in-vivo brain magnetic resonance current density imaging (MRCDI). NeuroImage, 2018, 171, 26-39.	4.2	44
58	Connectivity between Right Inferior Frontal Gyrus and Supplementary Motor Area Predicts After-Effects of Right Frontal Cathodal tDCS on Picture Naming Speed. Brain Stimulation, 2014, 7, 122-129.	1.6	43
59	Distilling the essence of TMS-evoked EEG potentials (TEPs): A call for securing mechanistic specificity and experimental rigor. Brain Stimulation, 2019, 12, 1051-1054.	1.6	42
60	Miniature ultrasound ring array transducers for transcranial ultrasound neuromodulation of freely-moving small animals. Brain Stimulation, 2019, 12, 251-255.	1.6	42
61	Value and limitations of intracranial recordings for validating electric field modeling for transcranial brain stimulation. NeuroImage, 2020, 208, 116431.	4.2	39
62	Detection of biological signals from a live mammalian muscle using an early stage diamond quantum sensor. Scientific Reports, 2021, 11, 2412.	3.3	39
63	Interleaved TMS/CASL: Comparison of different rTMS protocols. NeuroImage, 2010, 49, 612-620.	4.2	37
64	Uncovering a Context-Specific Connectional Fingerprint of Human Dorsal Premotor Cortex. Journal of Neuroscience, 2012, 32, 7244-7252.	3.6	37
65	Impact of tumor position, conductivity distribution and tissue homogeneity on the distribution of tumor treating fields in a human brain: A computer modeling study. PLoS ONE, 2017, 12, e0179214.	2.5	35
66	Enhancing Predicted Efficacy of Tumor Treating Fields Therapy of Glioblastoma Using Targeted Surgical Craniectomy: A Computer Modeling Study. PLoS ONE, 2016, 11, e0164051.	2.5	34
67	Efficient high-resolution TMS mapping of the human motor cortex by nonlinear regression. NeuroImage, 2021, 245, 118654.	4.2	33
68	Importance of electrode position for the distribution of tumor treating fields (TTFields) in a human brain. Identification of effective layouts through systematic analysis of array positions for multiple tumor locations. PLoS ONE, 2018, 13, e0201957.	2.5	32
69	Increasing propensity to mindâ€wander by transcranial direct current stimulation? A registered report. European Journal of Neuroscience, 2020, 51, 755-780.	2.6	32
70	Globally consistent depth sorting of overlapping 2D surfaces in a model using local recurrent interactions. Biological Cybernetics, 2008, 98, 305-337.	1.3	29
71	Effects of Parietal TMS on Visual and Auditory Processing at the Primary Cortical Level â€“ A Concurrent TMS-fMRI Study. Cerebral Cortex, 2013, 23, 873-884.	2.9	29
72	Texture segmentation in human perception: A combined modeling and fMRI study. Neuroscience, 2008, 151, 730-736.	2.3	28

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73	The Myelin Content of the Human Precentral Hand Knob Reflects Interindividual Differences in Manual Motor Control at the Physiological and Behavioral Level. Journal of Neuroscience, 2021, 41, 3163-3179.	3.6	24
74	Comparison of prospective head motion correction with NMR field probes and an optical tracking system. Magnetic Resonance in Medicine, 2019, 81, 719-729.	3.0	23
75	Neural mechanisms of human texture processing: Texture boundary detection and visual search. Spatial Vision, 2005, 18, 227-257.	1.4	22
76	Determining the cortical target of transcranial magnetic stimulation. NeuroImage, 2009, 47, 1319-1330.	4.2	22
77	Stimulating aged brains with transcranial direct current stimulation: Opportunities and challenges. Psychiatry Research - Neuroimaging, 2020, 306, 111179.	1.8	21
78	Interindividual variability of electric fields during transcranial temporal interference stimulation (tTIS). Scientific Reports, 2021, 11, 20357.	3.3	21
79	A checklist for assessing the methodological quality of concurrent tES-fMRI studies (ContES) Tj ETQq1 1 0.784314 rgBT /Overlock 10	12.0	21
80	Feasibility and resolution limits of opto-magnetic imaging of neural network activity in brain slices using color centers in diamond. Scientific Reports, 2018, 8, 4503.	3.3	20
81	Reaching with the sixth sense: Vestibular contributions to voluntary motor control in the human right parietal cortex. NeuroImage, 2016, 124, 869-875.	4.2	19
82	Transducer modeling for accurate acoustic simulations of transcranial focused ultrasound stimulation. Journal of Neural Engineering, 2020, 17, 046010.	3.5	19
83	A computational model to link psychophysics and cortical cell activation patterns in human texture processing. Journal of Computational Neuroscience, 2007, 22, 255-282.	1.0	18
84	Effects of bifrontal transcranial direct current stimulation on brain glutamate levels and resting state connectivity: multimodal MRI data for the cathodal stimulation site. European Archives of Psychiatry and Clinical Neuroscience, 2021, 271, 111-122.	3.2	17
85	Estimation of individually induced e-field strength during transcranial electric stimulation using the head circumference. Brain Stimulation, 2021, 14, 1055-1058.	1.6	16
86	Database of 25 validated coil models for electric field simulations for TMS. Brain Stimulation, 2022, 15, 697-706.	1.6	16
87	Transcranial Magnetic Stimulation: An Automated Procedure toÂObtain Coil-specific Models for Field Calculations. Brain Stimulation, 2015, 8, 1205-1208.	1.6	15
88	Head models of healthy and depressed adults forÂsimulating the electric fields of non-invasive electric brain stimulation. F1000Research, 2018, 7, 704.	1.6	15
89	Optimization of tumor treating fields using singular value decomposition and minimization of field anisotropy. Physics in Medicine and Biology, 2019, 64, 04NT03.	3.0	14
90	Optimizing the electric field strength in multiple targets for multichannel transcranial electric stimulation. Journal of Neural Engineering, 2021, 18, 014001.	3.5	14

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91	The impact of CT image parameters and skull heterogeneity modeling on the accuracy of transcranial focused ultrasound simulations. Journal of Neural Engineering, 2021, 18, 046041.	3.5	14
92	Multichannel anodal tDCS over the left dorsolateral prefrontal cortex in a paediatric population. Scientific Reports, 2021, 11, 21512.	3.3	14
93	Sensitivity analysis of magnetic field measurements for magnetic resonance electrical impedance tomography (MREIT). Magnetic Resonance in Medicine, 2018, 79, 748-760.	3.0	13
94	Fast evaluation of the Biot-Savart integral using FFT for electrical conductivity imaging. Journal of Computational Physics, 2020, 411, 109408.	3.8	13
95	Differences in electric field strength between clinical and non-clinical populations induced by prefrontal tDCS: A cross-diagnostic, individual MRI-based modeling study. NeuroImage: Clinical, 2022, 34, 103011.	2.7	13
96	The stray magnetic fields in Magnetic Resonance Current Density Imaging (MRCDI). Physica Medica, 2019, 59, 142-150.	0.7	12
97	Head models of healthy and depressed adults for simulating the effects of non-invasive brain stimulation. F1000Research, 2018, 7, 704.	1.6	10
98	Comparing TMS perturbations to occipital and parietal cortices in concurrent TMS-fMRI studiesâ€"Methodological considerations. PLoS ONE, 2017, 12, e0181438.	2.5	9
99	Estimating the Intensity and Anisotropy of Tumor Treating Fields Jsing Singular Value Decomposition. Towards a More Comprehensive Estimation of Anti-tumor Efficacy. , 2018, 2018, 4897-4900.		9
100	Design of a new MR-compatible haptic interface with six actuated degrees of freedom. , 2014, , .		8
101	Transcranial magnetic stimulation of right inferior parietal cortex causally influences prefrontal activation for visual detection. European Journal of Neuroscience, 2017, 46, 2807-2816.	2.6	8
102	EXTH-04. GUIDING PRINCIPLES FOR PREDICTING THE DISTRIBUTION OF TUMOR TREATING FIELDS IN AÂHUMAN BRAIN: AÂCOMPUTER MODELING STUDY INVESTIGATING THE IMPACT OF TUMOR POSITION, CONDUCTIVITY DISTRIBUTION AND TISSUE HOMOGENEITY. Neuro-Oncology, 2017, 19, vi73-vi73.	1.2	8
103	Enhancing Tumor Treating Fields Therapy with Skull-Remodeling Surgery. The Role of Finite Element Methods in Surgery Planning. , 2019, 2019, 6995-6997.		7
104	Accurate anatomical head segmentations: a data set for biomedical simulations. , 2019, 2019, 6118-6123.		6
105	Safety evaluation of a new setup for transcranial electric stimulation during magnetic resonance imaging. Brain Stimulation, 2021, 14, 488-497.	1.6	6
106	Relationship between high-frequency activity in the cortical sensory and the motor hand areas, and their myelin content. Brain Stimulation, 2022, 15, 717-726.	1.6	6
107	An MR-Compatible Haptic Interface With Seven Degrees of Freedom. IEEE/ASME Transactions on Mechatronics, 2018, 23, 624-635.	5.8	5
108	Commentary: Transcranial stimulation of the frontal lobes increases propensity of mind-wandering without changing meta-awareness. Frontiers in Psychology, 2019, 10, 130.	2.1	5

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109	Probing EEG activity in the targeted cortex after focal transcranial electrical stimulation. Brain Stimulation, 2020, 13, 815-818.	1.6	5
110	In-vitro Recordings of Neural Magnetic Activity From the Auditory Brainstem Using Color Centers in Diamond: A Simulation Study. Frontiers in Neuroscience, 2021, 15, 643614.	2.8	5
111	On the reconstruction of magnetic resonance current density images of the human brain: Pitfalls and perspectives. NeuroImage, 2021, 243, 118517.	4.2	5
112	Chapter 19 Motor and phosphene thresholds: consequences of cortical anisotropy. Supplements To Clinical Neurophysiology, 2003, 56, 198-203.	2.1	4
113	Sensitivity and resolution improvement for in vivo magnetic resonance currentâ€density imaging of the human brain. Magnetic Resonance in Medicine, 2021, 86, 3131-3146.	3.0	4
114	Electric field calculations in brain stimulation: The importance of geometrically accurate head models. Biomedizinische Technik, 2012, 57, .	0.8	3
115	ACTR-43. OPEN-LABEL PHASE 1 CLINICAL TRIAL TESTING PERSONALIZED AND TARGETED SKULL REMODELING SURGERY TO MAXIMIZE TTFIELDS INTENSITY FOR RECURRENT GLIOBLASTOMA â€“ INTERIM ANALYSIS AND SAFETY ASSESSMENT (OPTIMALTTF-1). Neuro-Oncology, 2018, 20, vi21-vi21.	1.2	3
116	Short periods of bipolar anodal TDCS induce no instantaneous dose-dependent increase in cerebral blood flow in the targeted human motor cortex. Scientific Reports, 2022, 12, .	3.3	3
117	Accurate TMS Head Modeling: Interfacing SimNIBS and BEM-FMM in a MATLAB-Based Module. , 2020, 2020, 5326-5329.		2
118	Skull segmentation from MR scans using a higher-order shape model based on convolutional restricted Boltzmann machines. , 2018, , .		1
119	EXTH-40. OPTIMIZING ARRAY LAYOUTS FOR GLIOBLASTOMA THERAPY WITH TUMOR TREATING FIELDS (TTFIELDS) â€“USE OF OBLIQUE ARRAY LAYOUTS SURPASS DEFAULT LEFT-RIGHT/ANTERIOR-POSTERIOR POSITIONS IN A COMPUTER SIMULATION MODEL. Neuro-Oncology, 2018, 20, vi93-vi93.	1.2	0
120	EXTH-38. A NEW COMPUTATIONAL METHOD FOR COMPREHENSIVE ESTIMATION OF ANTI TUMOR EFFICACY OF TUMOR TREATING FIELDS (TTFIELDS). ACCOUNTING FOR FIELD INTENSITY, EXPOSURE TIME AND UNWANTED SPATIAL FIELD CORRELATION. Neuro-Oncology, 2018, 20, vi93-vi93.	1.2	0
121	[OA019] Human in-vivo Magnetic Resonance Current Density Imaging (MRCDI) and MR Electrical Impedance Tomography (MREIT). Physica Medica, 2018, 52, 8.	0.7	0
122	SURG-01. OPTIMALTTF-1: FINAL RESULTS OF A PHASE 1 STUDY: FIRST GLIOBLASTOMA RECURRENCE EXAMINING TARGETED SKULL REMODELING SURGERY TO ENHANCE TUMOR TREATING FIELDS STRENGTH. Neuro-Oncology, 2019, 21, vi239-vi240.	1.2	0
123	DEVELOPMENT OF A NAVIGATION SYSTEM FOR TRANSCRANIAL MAGNETIC STIMULATION (TMS). , 2004, , .		0
124	Commentary: â€œTranscranial stimulation of the frontal lobes increases propensity of mind-wandering without changing meta-awarenessâ€• , 0, , .		0
125	Guidelines for Burr Hole Surgery in Combination With Tumor Treating Fields for Glioblastoma: A Computational Study on Dose Optimization and Array Layout Planning. Frontiers in Human Neuroscience, 0, 16, .	2.0	0