Ilkka Laakso

List of Publications by Year in descending order

102 papers	3,084 citations	159358 30 h-index	189595 50 g-index
107 all docs	107 docs citations	107 times ranked	2042 citing authors

#	Article	IF	Citations
1	Inter-subject Variability in Electric Fields of Motor Cortical tDCS. Brain Stimulation, 2015, 8, 906-913.	0.7	304
2	Fast multigrid-based computation of the induced electric field for transcranial magnetic stimulation. Physics in Medicine and Biology, 2012, 57, 7753-7765.	1.6	142
3	Effects of coil orientation on the electric field induced by TMS over the hand motor area. Physics in Medicine and Biology, 2014, 59, 203-218.	1.6	137
4	Can electric fields explain inter-individual variability in transcranial direct current stimulation of the motor cortex?. Scientific Reports, 2019, 9, 626.	1.6	120
5	Electric fields of motor and frontal tDCS in a standard brain space: A computer simulation study. NeuroImage, 2016, 137, 140-151.	2.1	113
6	Reducing the staircasing error in computational dosimetry of low-frequency electromagnetic fields. Physics in Medicine and Biology, 2012, 57, N25-N34.	1.6	104
7	Where and what TMS activates: Experiments and modeling. Brain Stimulation, 2018, 11, 166-174.	0.7	95
8	Computational analysis shows why transcranial alternating current stimulation induces retinal phosphenes. Journal of Neural Engineering, 2013, 10, 046009.	1.8	94
9	Confirmation of quasi-static approximation in SAR evaluation for a wireless power transfer system. Physics in Medicine and Biology, 2013, 58, N241-N249.	1.6	81
10	Cost of focality in TDCS: Interindividual variability in electric fields. Brain Stimulation, 2020, 13, 117-124.	0.7	80
11	Evaluation of the induced electric field and compliance procedure for a wireless power transfer system in an electrical vehicle. Physics in Medicine and Biology, 2013, 58, 7583-7593.	1.6	70
12	Dominant factors affecting temperature rise in simulations of human thermoregulation during RF exposure. Physics in Medicine and Biology, 2011, 56, 7449-7471.	1.6	67
13	Evaluation of SAR in a human body model due to wireless power transmission in the 10 MHz band. Physics in Medicine and Biology, 2012, 57, 4991-5002.	1.6	67
14	On the averaging area for incident power density for human exposure limits at frequencies over 6 GHz. Physics in Medicine and Biology, 2017, 62, 3124-3138.	1.6	67
15	Assessment of Human Exposure to Electromagnetic Fields: Review and Future Directions. IEEE Transactions on Electromagnetic Compatibility, 2021, 63, 1619-1630.	1.4	62
16	Atlas of optimal coil orientation and position for TMS: A computational study. Brain Stimulation, 2018, 11, 839-848.	0.7	58
17	An equivalent skin conductivity model for low-frequency magnetic field dosimetry. Biomedical Physics and Engineering Express, 2015, 1, 015201.	0.6	50
18	*In-situ* electric field in human body model in different postures for wireless power transfer system in an electrical vehicle. Physics in Medicine and Biology, 2015, 60, 163-173.	1.6	50

#	Article	IF	Citations
19	Computational Artifacts of the In Situ Electric Field in Anatomical Models Exposed to Low-Frequency Magnetic Field. IEEE Transactions on Electromagnetic Compatibility, 2018, 60, 589-597.	1.4	49
20	Group-level and functional-region analysis of electric-field shape during cerebellar transcranial direct current stimulation with different electrode montages. Journal of Neural Engineering, 2019, 16, 036001.	1.8	45
21	Human exposure to pulsed fields in the frequency range from 6 to 100 GHz. Physics in Medicine and Biology, 2017, 62, 6980-6992.	1.6	44
22	Time constants for temperature elevation in human models exposed to dipole antennas and beams in the frequency range from 1 to 30 GHz. Physics in Medicine and Biology, 2017, 62, 1676-1699.	1.6	43
23	Efficiently searching through large tACS parameter spaces using closed-loop Bayesian optimization. Brain Stimulation, 2019, 12, 1484-1489.	0.7	43
24	A high-resolution computational localization method for transcranial magnetic stimulation mapping. NeuroImage, 2018, 172, 85-93.	2.1	42
25	Human exposure to radiofrequency energy above 6 GHz: review of computational dosimetry studies. Physics in Medicine and Biology, 2021, 66, 08TR01.	1.6	41
26	TMS Motor Thresholds Correlate With TDCS Electric Field Strengths in Hand Motor Area. Frontiers in Neuroscience, 2018, 12, 426.	1.4	40
27	Relationship between peak spatial-averaged specific absorption rate and peak temperature elevation in human head in frequency range of 1â€"30 GHz. Physics in Medicine and Biology, 2016, 61, 5406-5425.	1.6	39
28	Assessment of the Induced Electric Fields in a Carbon-Fiber Electrical Vehicle Equipped with a Wireless Power Transfer System. Energies, 2018, 11, 684.	1.6	35
29	Performance of convolutional PML absorbing boundary conditions in finite-difference time-domain SAR calculations. Physics in Medicine and Biology, 2007, 52, 7183-7192.	1.6	34
30	Computational estimation of body temperature and sweating in the aged during passive heat exposure. International Journal of Thermal Sciences, 2015, 89, 154-163.	2.6	34
31	Real-time estimation of electric fields induced by transcranial magnetic stimulation with deep neural networks. Brain Stimulation, 2019, 12, 1500-1507.	0.7	33
32	The relationship between specific absorption rate and temperature elevation in anatomically based human body models for plane wave exposure from 30 MHz to 6 GHz. Physics in Medicine and Biology, 2013, 58, 903-921.	1.6	31
33	Computational dosimetry of induced electric fields during realistic movements in the vicinity of a 3 T MRI scanner. Physics in Medicine and Biology, 2013, 58, 2625-2640.	1.6	31
34	Assessment of the computational uncertainty of temperature rise and SAR in the eyes and brain under far-field exposure from 1 to 10 GHz. Physics in Medicine and Biology, 2009, 54, 3393-3404.	1.6	30
35	Analysis of in situ electric field and specific absorption rate in human models for wireless power transfer system with induction coupling. Physics in Medicine and Biology, 2014, 59, 3721-3735.	1.6	28
36	Derivation of Coupling Factors for Different Wireless Power Transfer Systems: Inter- and Intralaboratory Comparison. IEEE Transactions on Electromagnetic Compatibility, 2017, 59, 677-685.	1.4	27

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37	Multi-scale simulations predict responses to non-invasive nerve root stimulation. Journal of Neural Engineering, 2014, 11, 056013.	1.8	26
38	On the Use of Conformal Models and Methods in Dosimetry for Nonuniform Field Exposure. IEEE Transactions on Electromagnetic Compatibility, 2018, 60, 328-337.	1.4	25
39	Computational errors of the induced electric field in voxelized and tetrahedral anatomical head models exposed to spatially uniform and localized magnetic fields. Physics in Medicine and Biology, 2020, 65, 015001.	1.6	25
40	Computational estimation of magnetically induced electric fields in a rotating head. Physics in Medicine and Biology, 2009, 54, 341-351.	1.6	24
41	Evaluation of nonuniform field exposures with coupling factors. Physics in Medicine and Biology, 2015, 60, 8129-8140.	1.6	24
42	Review on biophysical modelling and simulation studies for transcranial magnetic stimulation. Physics in Medicine and Biology, 2020, 65, 24TR03.	1.6	23
43	Computational estimation of decline in sweating in the elderly from measured body temperatures and sweating for passive heat exposure. Physiological Measurement, 2012, 33, N51-N60.	1.2	22
44	Effect of microscopic modeling of skin in electrical and thermal analysis of transcranial direct current stimulation. Physics in Medicine and Biology, 2016, 61, 8825-8838.	1.6	22
45	Intercomparison of <i>In Situ</i> Electric Fields in Human Models Exposed to Spatially Uniform Magnetic Fields. IEEE Access, 2018, 6, 70964-70973.	2.6	22
46	Comparison of SAR calculation algorithms for the finite-difference time-domain method. Physics in Medicine and Biology, 2010, 55, N421-N431.	1.6	21
47	Why intra-epidermal electrical stimulation achieves stimulation of small fibres selectively: a simulation study. Physics in Medicine and Biology, 2016, 61, 4479-4490.	1.6	21
48	Computational dosimetry for grounded and ungrounded human models due to contact current. Physics in Medicine and Biology, 2013, 58, 5153-5172.	1.6	17
49	Coil model comparison for cerebellar transcranial magnetic stimulation. Biomedical Physics and Engineering Express, 2018, 5, 015020.	0.6	17
50	A multi-scale computational approach based on TMS experiments for the assessment of electro-stimulation thresholds of the brain at intermediate frequencies. Physics in Medicine and Biology, 2018, 63, 225006.	1.6	17
51	Group-level analysis of induced electric field in deep brain regions by different TMS coils. Physics in Medicine and Biology, 2020, 65, 025007.	1.6	17
52	Estimation of the whole-body averaged SAR of grounded human models for plane wave exposure at respective resonance frequencies. Physics in Medicine and Biology, 2012, 57, 8427-8442.	1.6	16
53	Risk Management of Heatstroke Based on Fast Computation of Temperature and Water Loss Using Weather Data for Exposure to Ambient Heat and Solar Radiation. IEEE Access, 2018, 6, 3774-3785.	2.6	16
54	Effects of posture on electric fields of non-invasive brain stimulation. Physics in Medicine and Biology, 2019, 64, 065019.	1.6	16

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55	TMS activation site estimation using multiscale realistic head models. Journal of Neural Engineering, 2020, 17, 036004.	1.8	16
56	Computational analysis of thresholds for magnetophosphenes. Physics in Medicine and Biology, 2012, 57, 6147-6165.	1.6	15
57	Evaluation method for *in situ* electric field in standardized human brain for different transcranial magnetic stimulation coils. Physics in Medicine and Biology, 2017, 62, 2224-2238.	1.6	15
58	Computational Dosimetry of the Human Head Exposed to Near-Field Microwaves Using Measured Blood Flow. IEEE Transactions on Electromagnetic Compatibility, 2017, 59, 739-746.	1.4	15
59	On the issues related to compliance of LF pulsed exposures with safety standards and guidelines. Physics in Medicine and Biology, 2013, 58, 8597-8607.	1.6	14
60	Effect of Incidence Angle on the Spatial-Average of Incident Power Density Definition to Correlate Skin Temperature Rise for Millimeter Wave Exposures. IEEE Transactions on Electromagnetic Compatibility, 2021, 63, 1709-1716.	1.4	14
61	Computation of induced electric field for the sacral nerve activation. Physics in Medicine and Biology, 2013, 58, 7745-7755.	1.6	12
62	Relationship of External Field Strength With Local and Whole-Body Averaged Specific Absorption Rates in Anatomical Human Models. IEEE Access, 2018, 6, 70186-70196.	2.6	12
63	Effect of Electrical Conductivity Uncertainty in the Assessment of the Electric Fields Induced in the Brain by Exposure to Uniform Magnetic Fields at 50 Hz. IEEE Access, 2020, 8, 222297-222309.	2.6	11
64	Quasistatic Approximation for Exposure Assessment of Wireless Power Transfer. IEICE Transactions on Communications, 2015, E98.B, 1156-1163.	0.4	10
65	Modelling of induced electric fields based on incompletely known magnetic fields. Physics in Medicine and Biology, 2017, 62, 6567-6578.	1.6	9
66	Computational Low-Frequency Electromagnetic Dosimetry Based on Magnetic Field Measurements. IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology, 2018, 2, 302-309.	2.3	9
67	Comparison of Numerical Techniques for the Evaluation of Human Exposure From Measurement Data. IEEE Transactions on Magnetics, 2019, 55, 1-4.	1.2	9
68	SAR evaluation in models of an adult and a child for magnetic field from wireless power transfer systems at 6.78 MHz. Biomedical Physics and Engineering Express, 2016, 2, 027001.	0.6	8
69	The Effect of Dual-Hemisphere Transcranial Direct Current Stimulation Over the Parietal Operculum on Tactile Orientation Discrimination. Frontiers in Behavioral Neuroscience, 2017, 11, 173.	1.0	8
70	FDTD analysis of temperature elevation in the lens of human and rabbit models due to near-field and far-field exposures at 2.45 GHz. Radiation Protection Dosimetry, 2013, 155, 284-291.	0.4	7
71	Variability in TDCS electric fields: Effects of electrode size and configuration. , 2017, , .		7
72	DOMINANT FACTORS AFFECTING TEMPERATURE ELEVATION IN ADULT AND CHILD MODELS EXPOSED TO SOLAR RADIATION IN HOT ENVIRONMENT. Progress in Electromagnetics Research B, 2011, 34, 47-61.	0.7	6

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73	EMF EXPOSURE ANALYSIS FOR A COMPACT MULTI-BAND 5G ANTENNA. Progress in Electromagnetics Research M, 2018, 68, 193-201.	0.5	6
74	FDTD computation of temperature elevation in the elderly for far-field RF exposures. Radiation Protection Dosimetry, 2014, 158, 497-500.	0.4	5
75	Computational dosimetry for child and adult human models due to contact current from 10 Hz to 110 MHz. Radiation Protection Dosimetry, 2015, 167, 642-652.	0.4	5
76	NUMERICAL MODELING OF ELECTROMAGNETIC FIELD EXPOSURE FROM 5G MOBILE COMMUNICATIONS AT 10 GHZ. Progress in Electromagnetics Research M, 2018, 72, 61-67.	0.5	5
77	A probabilistic transcranial magnetic stimulation localization method. Journal of Neural Engineering, 2021, 18, 0460f3.	1.8	5
78	Numerical specific absorption rate analysis and measurement of a small indoor base station antenna. Microwave and Optical Technology Letters, 2008, 50, 2516-2521.	0.9	4
79	Improving the computational speed and reducing the staircasing error for simulations of human exposure to low frequency magnetic fields. , 2012, , .		4
80	Computation of Temperature Elevation in a Fetus Exposed to Ambient Heat and Radio Frequency Fields. Numerical Heat Transfer; Part A: Applications, 2014, 65, 1176-1186.	1.2	4
81	A 50 Hz magnetic field affects hemodynamics, ECG and vascular endothelial function in healthy adults: A pilot randomized controlled trial. PLoS ONE, 2021, 16, e0255242.	1.1	4
82	Inter-individual variations in electric fields induced in the brain by exposure to uniform magnetic fields at 50 Hz. Physics in Medicine and Biology, 2020, 65, 215006.	1.6	4
83	The Effect of Inter-pulse Interval on TMS Motor Evoked Potentials in Active Muscles. Frontiers in Human Neuroscience, 2022, 16, 845476.	1.0	4
84	Combined Simulation of Bioelectromagnetics and Nerve Activation and its Application. IEEJ Transactions on Fundamentals and Materials, 2018, 138, 265-270.	0.2	3
85	Modelling the SAR and thermoregulatory response during far-field RF exposure. , 2012, , .		2
86	Modeling and Measurement of Exposure to Realistic Non-Uniform Electric Fields at 50 Hz. , 2019, , .		2
87	Nonuniform Exposure to the Cornea from Millimeter Waves. Health Physics, 2021, 120, 525-531.	0.3	2
88	ECG Localization Method Based on Volume Conductor Model and Kalman Filtering. Sensors, 2021, 21, 4275.	2.1	2
89	Magneto- and electrophosphene thresholds in the retina: a dosimetry modeling study. Physics in Medicine and Biology, 2022, 67, 015001.	1.6	2
90	Alternative approach for modeling material interfaces in FDTD. Microwave and Optical Technology Letters, 2008, 50, 1211-1214.	0.9	1

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91	Computation of temperature elevation in fetus due to radio-frequency exposure with a new thermal modeling. , 2013, 2013, 3753-6.		1
92	Dielectric polarization transients in biological tissue moving in a static magnetic field. Bioelectromagnetics, 2016, 37, 409-422.	0.9	1
93	Sub-voxel refinement method for tissue boundary conductivities in volume conductor models. , 2016, , .		1
94	Thresholds of central nervous system stimulation at intermediate frequencies. , 2016, , .		1
95	Evaluation method for in-situ electric field of different TMS coils in human brain. , 2016, , .		1
96	Relationship Between In-Situ Electric Field and External Magnetic Field Strength in Human Models-Rational of IEEE C95.6 Standard Revisited. , 2018, , .		1
97	Risk Evaluation of Heat Stroke with Multiphysics Computation and its Application. IEEJ Transactions on Fundamentals and Materials, 2018, 138, 288-294.	0.2	1
98	HYBRID FEM/BEM FOR HUMAN HEADS EXPOSED TO HIGH FREQUENCY ELECTROMAGNETIC RADIATION. WIT Transactions on the Built Environment, 2017, , .	0.0	1
99	Computational Dosimetry at Low Frequencies: Recent Progress and Open Issues. , 2020, , .		1
100	FDTD analysis of temperature elevation in the human and rabbit phantoms due to plane-wave exposure at 2.45GHz. , 2012, , .		0
101	RF Field Based Detection of Compartment Syndrome. , 2019, , .		0
102	Sub-voxel refinement method for tissue boundary conductivities in volume conductor models. URSI Radio Science Bulletin, 2017, 2017, 13-18.	0.2	0