Gernot Plank

List of Publications by Year
in descending order

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251 papers	7,191 citations	57631 44 h-index	76769 74 g-index
260 all docs	260 docs citations	260 times ranked	3268 citing authors

#	Article	IF	Citations
1	A Novel Rule-Based Algorithm for Assigning Myocardial Fiber Orientation to Computational Heart Models. Annals of Biomedical Engineering, 2012, 40, 2243-2254.	1.3	399
2	Computational tools for modeling electrical activity in cardiac tissue. Journal of Electrocardiology, 2003, 36, 69-74.	0.4	292
3	Solvers for the cardiac bidomain equations. Progress in Biophysics and Molecular Biology, 2008, 96, 3-18.	1.4	292
4	Verification of cardiac tissue electrophysiology simulators using an <i>N</i> -version benchmark. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2011, 369, 4331-4351.	1.6	253
5	Development of an anatomically detailed MRI-derived rabbit ventricular model and assessment of its impact on simulations of electrophysiological function. American Journal of Physiology - Heart and Circulatory Physiology, 2010, 298, H699-H718.	1.5	192
6	Algebraic Multigrid Preconditioner for the Cardiac Bidomain Model. IEEE Transactions on Biomedical Engineering, 2007, 54, 585-596.	2.5	138
7	Generation of histo-anatomically representative models of the individual heart: tools and application. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2009, 367, 2257-2292.	1.6	135
8	Length-dependent tension in the failing heart and the efficacy of cardiac resynchronization therapy. Cardiovascular Research, 2011, 89, 336-343.	1.8	133
9	From mitochondrial ion channels to arrhythmias in the heart: computational techniques to bridge the spatio-temporal scales. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2008, 366, 3381-3409.	1.6	126
10	Parallel Multigrid Preconditioner for the Cardiac Bidomain Model. IEEE Transactions on Biomedical Engineering, 2004, 51, 1960-1968.	2.5	125
11	Automatically Generated, Anatomically Accurate Meshes for Cardiac Electrophysiology Problems. IEEE Transactions on Biomedical Engineering, 2009, 56, 1318-1330.	2.5	124
12	Anatomically accurate high resolution modeling of human whole heart electromechanics: A strongly scalable algebraic multigrid solver method for nonlinear deformation. Journal of Computational Physics, 2016, 305, 622-646.	1.9	115
13	Imageâ€based models of cardiac structure in health and disease. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2010, 2, 489-506.	6.6	113
14	Mechanistic Inquiry into the Role of Tissue Remodeling in Fibrotic Lesions in Human Atrial Fibrillation. Biophysical Journal, 2013, 104, 2764-2773.	0.2	113
15	Methodology for patient-specific modeling of atrial fibrosis as a substrate for atrial fibrillation. Journal of Electrocardiology, 2012, 45, 640-645.	0.4	112
16	Towards predictive modelling of the electrophysiology of the heart. Experimental Physiology, 2009, 94, 563-577.	0.9	110
17	Efficient computation of electrograms and ECGs in human whole heart simulations using a reaction-eikonal model. Journal of Computational Physics, 2017, 346, 191-211.	1.9	109
18	Simulating Human Cardiac Electrophysiology on Clinical Time-Scales. Frontiers in Physiology, 2011, 2, 14.	1.3	105

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19	Influence of myocardial fiber/sheet orientations on left ventricular mechanical contraction. Mathematics and Mechanics of Solids, 2013, 18, 592-606.	1.5	93
20	Three-Dimensional Models of Individual Cardiac Histoanatomy: Tools and Challenges. Annals of the New York Academy of Sciences, 2006, 1080, 301-319.	1.8	89
21	The openCARP simulation environment for cardiac electrophysiology. Computer Methods and Programs in Biomedicine, 2021, 208, 106223.	2.6	84
22	Tachycardia in Post-Infarction Hearts: Insights from 3D Image-Based Ventricular Models. PLoS ONE, 2013, 8, e68872.	1.1	84
23	Verification of cardiac mechanics software: benchmark problems and solutions for testing active and passive material behaviour. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150641.	1.0	80
24	Image-based models of cardiac structure with applications in arrhythmia and defibrillation studies. Journal of Electrocardiology, 2009, 42, 157.e1-157.e10.	0.4	75
25	Biophysical Modeling to Simulate the Response to Multisite Left Ventricular Stimulation Using a Quadripolar Pacing Lead. PACE - Pacing and Clinical Electrophysiology, 2012, 35, 204-214.	0.5	72
26	Modeling the Electrophysiological Properties of the Infarct Border Zone. Frontiers in Physiology, 2018, 9, 356.	1.3	72
27	A Framework for the generation of digital twins of cardiac electrophysiology from clinical 12-leads ECGs. Medical Image Analysis, 2021, 71, 102080.	7.0	72
28	The role of fineâ€scale anatomical structure in the dynamics of reentry in computational models of the rabbit ventricles. Journal of Physiology, 2012, 590, 4515-4535.	1.3	71
29	Universal ventricular coordinates: A generic framework for describing position within the heart and transferring data. Medical Image Analysis, 2018, 45, 83-93.	7.0	66
30	Assessment of three numerical solution strategies for gravity field recovery from GOCE satellite gravity gradiometry implemented on a parallel platform. Journal of Geodesy, 2002, 76, 462-474.	1.6	65
31	Modeling the dispersion in electromechanically coupled myocardium. International Journal for Numerical Methods in Biomedical Engineering, 2013, 29, 1267-1284.	1.0	64
32	Effects of Regional Mitochondrial Depolarization on Electrical Propagation. Circulation: Arrhythmia and Electrophysiology, 2014, 7, 143-151.	2.1	60
33	Representing Cardiac Bidomain Bath-Loading Effects by an Augmented Monodomain Approach: Application to Complex Ventricular Models. IEEE Transactions on Biomedical Engineering, 2011, 58, 1066-1075.	2.5	59
34	Three-dimensional atrial wall thickness maps to inform catheter ablation procedures for atrial fibrillation. Europace, 2016, 18, 376-383.	0.7	59
35	A publicly available virtual cohort of four-chamber heart meshes for cardiac electro-mechanics simulations. PLoS ONE, 2020, 15, e0235145.	1.1	59
36	Modeling Atrial Fiber Orientation in Patient-Specific Geometries: A Semi-automatic Rule-Based Approach. Lecture Notes in Computer Science, 2011, , 223-232.	1.0	59

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37	Accelerating Cardiac Bidomain Simulations Using Graphics Processing Units. IEEE Transactions on Biomedical Engineering, 2012, 59, 2281-2290.	2.5	57
38	Bidomain ECG Simulations Using an Augmented Monodomain Model for the Cardiac Source. IEEE Transactions on Biomedical Engineering, 2011, 58, 2297-2307.	2.5	56
39	An Efficient Finite Element Approach for Modeling Fibrotic Clefts in the Heart. IEEE Transactions on Biomedical Engineering, 2014, 61, 900-910.	2.5	56
40	Simulating ventricular systolic motion in a four-chamber heart model with spatially varying robin boundary conditions to model the effect of the pericardium. Journal of Biomechanics, 2020, 101, 109645.	0.9	54
41	Defibrillation Depends on Conductivity Fluctuations and the Degree of Disorganization in Reentry Patterns. Journal of Cardiovascular Electrophysiology, 2005, 16, 205-216.	0.8	51
42	Creation and application of virtual patient cohorts of heart models. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190558.	1.6	50
43	Modeling the Role of the Coronary Vasculature During External Field Stimulation. IEEE Transactions on Biomedical Engineering, 2010, 57, 2335-2345.	2.5	49
44	Image-Based Personalization of Cardiac Anatomy for Coupled Electromechanical Modeling. Annals of Biomedical Engineering, 2016, 44, 58-70.	1.3	48
45	Beneficial Effect on Cardiac Resynchronization From Left Ventricular Endocardial Pacing Is Mediated by Early Access to High Conduction Velocity Tissue. Circulation: Arrhythmia and Electrophysiology, 2015, 8, 1164-1172.	2.1	47
46	Personalized computational modeling of left atrial geometry and transmural myofiber architecture. Medical Image Analysis, 2018, 47, 180-190.	7.0	46
47	Numerical solution for optimal control ofÂtheÂreaction-diffusion equations in cardiac electrophysiology. Computational Optimization and Applications, 2011, 49, 149-178.	0.9	44
48	His-bundle and left bundle pacing with optimized atrioventricular delay achieve superior electrical synchrony over endocardial and epicardial pacing in left bundle branch block patients. Heart Rhythm, 2020, 17, 1922-1929.	0.3	44
49	Threeâ€dimensional mechanisms of increased vulnerability to electric shocks in myocardial infarction: Altered virtual electrode polarizations and conduction delay in the periâ€infarct zone. Journal of Physiology, 2012, 590, 4537-4551.	1.3	42
50	Pacing in proximity to scar during cardiac resynchronization therapy increases local dispersion of repolarization and susceptibility to ventricular arrhythmogenesis. Heart Rhythm, 2019, 16, 1475-1483.	0.3	42
51	Arrhythmogenic mechanisms of the Purkinje system during electric shocks: A modeling study. Heart Rhythm, 2009, 6, 1782-1789.	0.3	41
52	A Macro Finite-Element Formulation for Cardiac Electrophysiology Simulations Using Hybrid Unstructured Grids. IEEE Transactions on Biomedical Engineering, 2011, 58, 1055-1065.	2.5	41
53	Stochastic spontaneous calcium release events trigger premature ventricular complexes by overcoming electrotonic load. Cardiovascular Research, 2015, 107, 175-183.	1.8	41
54	Automating image-based mesh generation and manipulation tasks in cardiac modeling workflows using Meshtool. SoftwareX, 2020, 11, 100454.	1.2	41

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55	Linking statistical shape models and simulated function in the healthy adult human heart. PLoS Computational Biology, 2021, 17, e1008851.	1.5	41
56	Evaluating Intramural Virtual Electrodes in the Myocardial Wedge Preparation: Simulations of Experimental Conditions. Biophysical Journal, 2008, 94, 1904-1915.	0.2	40
57	Balloon Dilatation and Stenting for Aortic Coarctation. Circulation: Cardiovascular Interventions, 2016, 9, .	1.4	40
58	Purkinje-mediated Effects in the Response of Quiescent Ventricles to Defibrillation Shocks. Annals of Biomedical Engineering, 2010, 38, 456-468.	1.3	39
59	A Parallel Algebraic Multigrid Solver on Graphics Processing Units. Lecture Notes in Computer Science, 2010, , 38-47.	1.0	39
60	The relative role of patient physiology and device optimisation in cardiac resynchronisation therapy: A computational modelling study. Journal of Molecular and Cellular Cardiology, 2016, 96, 93-100.	0.9	38
61	In silico Comparison of Left Atrial Ablation Techniques That Target the Anatomical, Structural, and Electrical Substrates of Atrial Fibrillation. Frontiers in Physiology, 2020, 11, 1145.	1.3	38
62	Modeling Defibrillation of the Heart: Approaches and Insights. IEEE Reviews in Biomedical Engineering, 2011, 4, 89-102.	13.1	36
63	A work flow to build and validate patient specific left atrium electrophysiology models from catheter measurements. Medical Image Analysis, 2018, 47, 153-163.	7.0	36
64	A rule-based method for predicting the electrical activation of the heart with cardiac resynchronization therapy from non-invasive clinical data. Medical Image Analysis, 2019, 57, 197-213.	7.0	36
65	Inter-model consistency and complementarity: Learning from ex-vivo imaging and electrophysiological data towards an integrated understanding of cardiac physiology. Progress in Biophysics and Molecular Biology, 2011, 107, 122-133.	1.4	35
66	Low Energy Defibrillation in Human Cardiac Tissue: A Simulation Study. Biophysical Journal, 2009, 96, 1364-1373.	0.2	33
67	What have we learned from mathematical models of defibrillation and postshock arrhythmogenesis? Application of bidomain simulations. Heart Rhythm, 2006, 3, 1232-1235.	0.3	32
68	Electroanatomical Characterization of Atrial Microfibrosis in a Histologically Detailed Computer Model. IEEE Transactions on Biomedical Engineering, 2013, 60, 2339-2349.	2.5	32
69	Patient-specific modeling of left ventricular electromechanics as a driver for haemodynamic analysis. Europace, 2016, 18, iv121-iv129.	0.7	32
70	Cardiac Bidomain Bath-Loading Effects during Arrhythmias: Interaction with Anatomical Heterogeneity. Biophysical Journal, 2011, 101, 2871-2881.	0.2	31
71	Accelerating cardiac excitation spread simulations using graphics processing units. Concurrency Computation Practice and Experience, 2011, 23, 708-720.	1.4	31
72	Factors Promoting Conduction Slowing as Substrates for Block and Reentry in Infarcted Hearts. Biophysical Journal, 2019, 117, 2361-2374.	0.2	31

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73	Influence of the Purkinje-muscle junction on transmural repolarization heterogeneity. Cardiovascular Research, 2014, 103, 629-640.	1.8	30
74	Investigating a Novel Activation-Repolarisation Time Metric to Predict Localised Vulnerability to Reentry Using Computational Modelling. PLoS ONE, 2016, 11, e0149342.	1.1	30
75	Spatially restricted data distributions on the sphere: the method of orthonormalized functions and applications. Journal of Geodesy, 2001, 75, 44-56.	1.6	29
76	A Hilbert-order multiplication scheme for unstructured sparse matrices. International Journal of Parallel, Emergent and Distributed Systems, 2007, 22, 213-220.	0.7	28
77	A new floating sensor array to detect electric near fields of beating heart preparations. Biosensors and Bioelectronics, 2006, 21, 2232-2239.	5.3	27
78	Microscopic Isthmuses and Fibrosis Within the Border Zone of Infarcted Hearts Promote Calcium-Mediated Ectopy and Conduction Block. Frontiers in Physics, 2018, 6, .	1.0	26
79	A computationally efficient physiologically comprehensive 3Dâ€“0D closed-loop model of the heart and circulation. Computer Methods in Applied Mechanics and Engineering, 2021, 386, 114092.	3.4	26
80	Direct comparison of a novel antitachycardia pacing algorithm against present methods using virtual patient modeling. Heart Rhythm, 2020, 17, 1602-1608.	0.3	26
81	Investigating the Role of the Coronary Vasculature in the Mechanisms of Defibrillation. Circulation: Arrhythmia and Electrophysiology, 2012, 5, 210-219.	2.1	25
82	Biophysical Modeling to Determine the Optimization of Left Ventricular Pacing Site and AV/VV Delays in the Acute and Chronic Phase of Cardiac Resynchronization Therapy. Journal of Cardiovascular Electrophysiology, 2017, 28, 208-215.	0.8	25
83	Fibrosis Microstructure Modulates Reentry in Non-ischemic Dilated Cardiomyopathy: Insights From Imaged Guided 2D Computational Modeling. Frontiers in Physiology, 2018, 9, 1832.	1.3	25
84	The functional role of electrophysiological heterogeneity in the rabbit ventricle during rapid pacing and arrhythmias. American Journal of Physiology - Heart and Circulatory Physiology, 2013, 304, H1240-H1252.	1.5	24
85	Towards a Computational Framework for Modeling the Impact of Aortic Coarctations Upon Left Ventricular Load. Frontiers in Physiology, 2018, 9, 538.	1.3	24
86	Automated Framework for the Inclusion of a Hisâ€“Purkinje System in Cardiac Digital Twins of Ventricular Electrophysiology. Annals of Biomedical Engineering, 2021, 49, 3143-3153.	1.3	24
87	Solving the Coupled System Improves Computational Efficiency of the Bidomain Equations. IEEE Transactions on Biomedical Engineering, 2009, 56, 2404-2412.	2.5	23
88	Local Gradients in Electrotonic Loading Modulate the Local Effective Refractory Period: Implications for Arrhythmogenesis in the Infarct Border Zone. IEEE Transactions on Biomedical Engineering, 2015, 62, 2251-2259.	2.5	23
89	Assessment of wall stresses and mechanical heart power in the left ventricle: Finite element modeling versus Laplace analysis. International Journal for Numerical Methods in Biomedical Engineering, 2018, 34, e3147.	1.0	23
90	The impact of wall thickness and curvature on wall stress in patient-specific electromechanical models of the left atrium. Biomechanics and Modeling in Mechanobiology, 2020, 19, 1015-1034.	1.4	23

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91	Personalization of electro-mechanical models of the pressure-overloaded left ventricle: fitting of Windkessel-type afterload models. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190342.	1.6	23
92	Optimal control approach to termination of re-entry waves in cardiac electrophysiology. Journal of Mathematical Biology, 2013, 67, 359-388.	0.8	22
93	Structural Heterogeneity Modulates Effective Refractory Period: A Mechanism of Focal Arrhythmia Initiation. PLoS ONE, 2014, 9, e109754.	1.1	22
94	Automatic Parameterization Strategy for Cardiac Electrophysiology Simulations. Computing in Cardiology, 2013, 40, 373-376.	0.4	22
95	The Left and Right Ventricles Respond Differently to Variation of Pacing Delays in Cardiac Resynchronization Therapy: A Combined Experimental- Computational Approach. Frontiers in Physiology, 2019, 10, 17.	1.3	21
96	Spongious Hypertrophic Cardiomyopathy in Patients With Mutations in the Four-and-a-Half LIM Domain 1 Gene. Circulation: Cardiovascular Genetics, 2012, 5, 490-502.	5.1	20
97	Influence of ischemic core muscle fibers on surface depolarization potentials in superfused cardiac tissue preparations: a simulation study. Medical and Biological Engineering and Computing, 2012, 50, 461-472.	1.6	20
98	Computational modeling of cardiac growth and remodeling in pressure overloaded heartsâ€"Linking microstructure to organ phenotype. Acta Biomaterialia, 2020, 106, 34-53.	4.1	20
99	Analyses of the Redistribution of Work following Cardiac Resynchronisation Therapy in a Patient Specific Model. PLoS ONE, 2012, 7, e43504.	1.1	20
100	Model Study of Vector-Loop Morphology During Electrical Mapping of Microscopic Conduction in Cardiac Tissue. Annals of Biomedical Engineering, 2000, 28, 1244-1252.	1.3	19
101	Near-real-time simulations of biolelectric activity in small mammalian hearts using graphical processing units. , 2009, 2009, 3290-3.		19
102	Stochastic spontaneous calcium release events and sodium channelopathies promote ventricular arrhythmias. Chaos, 2017, 27, 093910.	1.0	19
103	Arterial hypertension drives arrhythmia progression via specific structural remodeling in a porcine model of atrial fibrillation. Heart Rhythm, 2018, 15, 1328-1336.	0.3	19
104	Versatile stabilized finite element formulations for nearly and fully incompressible solid mechanics. Computational Mechanics, 2020, 65, 193-215.	2.2	17
105	Preconditioning Techniques for the Bidomain Equations. Lecture Notes in Computational Science and Engineering, 2005, , 571-580.	0.1	16
106	Simulating photon scattering effects in structurally detailed ventricular models using a Monte Carlo approach. Frontiers in Physiology, 2014, 5, 338.	1.3	16
107	Left ventricular endocardial pacing is less arrhythmogenic than conventional epicardial pacing when pacing in proximity to scar. Heart Rhythm, 2020, 17, 1262-1270.	0.3	16
108	An Integrated Workflow for Building Digital Twins of Cardiac Electromechanicsâ€"A Multi-Fidelity Approach for Personalising Active Mechanics. Mathematics, 2022, 10, 823.	1.1	16

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109	A multiscale computational model of spatially resolved calcium cycling in cardiac myocytes: from detailed cleft dynamics to the whole cell concentration profiles. Frontiers in Physiology, 2015, 6, 255.	1.3	15
110	Sensitivity and Specificity of Substrate Mapping: An <i>In Silico</i> Framework for the Evaluation of Electroanatomical Substrate Mapping Strategies. Journal of Cardiovascular Electrophysiology, 2014, 25, 774-780.	0.8	14
111	Sex-Dependent QRS Guidelines for Cardiac Resynchronization Therapy Using Computer Model Predictions. Biophysical Journal, 2019, 117, 2375-2381.	0.2	14
112	Automatic Generation of Bi-Ventricular Models of Cardiac Electrophysiology for Patient Specific Personalization Using Non-Invasive Recordings. , 0, , .		14
113	Generation of a cohort of whole-torso cardiac models for assessing the utility of a novel computed shock vector efficiency metric for ICD optimisation. Computers in Biology and Medicine, 2019, 112, 103368.	3.9	13
114	An inverse Eikonal method for identifying ventricular activation sequences from epicardial activation maps. Journal of Computational Physics, 2020, 419, 109700.	1.9	13
115	Late-Gadolinium Enhancement Interface Area and Electrophysiological Simulations Predict Arrhythmic Events in Patients With Nonischemic Dilated Cardiomyopathy. JACC: Clinical Electrophysiology, 2021, 7, 238-249.	1.3	13
116	Double-kissing culotte technique for coronary bifurcation stenting. EuroIntervention, 2020, 16, e724-e733.	1.4	13
117	Global Sensitivity Analysis of Four Chamber Heart Hemodynamics Using Surrogate Models. IEEE Transactions on Biomedical Engineering, 2022, 69, 3216-3223.	2.5	13
118	Robust and efficient fixed-point algorithm for the inverse elastostatic problem to identify myocardial passive material parameters and the unloaded reference configuration. Journal of Computational Physics, 2022, 463, 111266.	1.9	13
119	Estimation and Validation of Cardiac Conduction Velocity and Wavefront Reconstruction Using Epicardial and Volumetric Data. IEEE Transactions on Biomedical Engineering, 2021, 68, 3290-3300.	2.5	12
120	Assessing the ability of substrate mapping techniques to guide ventricular tachycardia ablation using computational modelling. Computers in Biology and Medicine, 2021, 130, 104214.	3.9	12
121	Comparison between the role of discontinuities in cardiac conduction and in a one-dimensional hardware model. Physical Review E, 1999, 59, 5962-5969.	0.8	11
122	Learning Atrial Fiber Orientations and Conductivity Tensors from Intracardiac Maps Using Physics-Informed Neural Networks. Lecture Notes in Computer Science, 2021, 2021, 650-658.	1.0	11
123	The Role of Blood Vessels in Rabbit Propagation Dynamics and Cardiac Arrhythmias. Lecture Notes in Computer Science, 2009, , 268-276.	1.0	11
124	An accurate, robust, and efficient finite element framework with applications to anisotropic, nearly and fully incompressible elasticity. Computer Methods in Applied Mechanics and Engineering, 2022, 394, 114887.	3.4	11
125	GOCE Gravity Field Processing Strategy. Studia Geophysica Et Geodaetica, 2004, 48, 289-309.	0.3	10
126	A 3D boundary optimal control for the bidomain-bath system modeling the thoracic shock therapy for cardiac defibrillation. Journal of Mathematical Analysis and Applications, 2016, 437, 972-998.	0.5	10

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127	Scar shape analysis and simulated electrical instabilities in a non-ischemic dilated cardiomyopathy patient cohort. PLoS Computational Biology, 2019, 15, e1007421.	1.5	10
128	In-silico pace-mapping using a detailed whole torso model and implanted electronic device electrograms for more efficient ablation planning. Computers in Biology and Medicine, 2020, 125, 104005.	3.9	10
129	A computational investigation into rate-dependant vectorcardiogram changes due to specific fibrosis patterns in non-ischÃ¦mic dilated cardiomyopathy. Computers in Biology and Medicine, 2020, 123, 103895.	3.9	10
130	PIEMAP: Personalized Inverse Eikonal Model from Cardiac Electro-Anatomical Maps. Lecture Notes in Computer Science, 2021, , 76-86.	1.0	10
131	Use of Cardiac Electric Near-Field Measurements to Determine Activation Times. Annals of Biomedical Engineering, 2003, 31, 1066-1076.	1.3	9
132	The Role of Photon Scattering in Voltage-Calcium Fluorescent Recordings of Ventricular Fibrillation. Biophysical Journal, 2011, 101, 307-318.	0.2	9
133	On boundary stimulation and optimal boundary control of the bidomain equations. Mathematical Biosciences, 2013, 245, 206-215.	0.9	9
134	Using machine learning to identify local cellular properties that support re-entrant activation in patient-specific models of atrial fibrillation. Europace, 2021, 23, i12-i20.	0.7	9
135	Automated Localization of Focal Ventricular Tachycardia From Simulated Implanted Device Electrograms: A Combined Physicsâ€"AI Approach. Frontiers in Physiology, 2021, 12, 682446.	1.3	9
136	On the incorporation of obstacles in a fluid flow problem using a Navierâ€"Stokesâ€"Brinkman penalization approach. Journal of Computational Science, 2022, 57, 101506.	1.5	9
137	Determining anatomical and electrophysiological detail requirements for computational ventricular models of porcine myocardial infarction. Computers in Biology and Medicine, 2022, 141, 105061.	3.9	9
138	Primal-dual active set strategy for large scale optimization of cardiac defibrillation. Applied Mathematics and Computation, 2017, 292, 178-193.	1.4	8
139	3D Electrophysiological Modeling of Interstitial Fibrosis Networks and Their Role in Ventricular Arrhythmias in Non-Ischemic Cardiomyopathy. IEEE Transactions on Biomedical Engineering, 2020, 67, 3125-3133.	2.5	8
140	High Performance Computer Simulations of Cardiac Electrical Function Based on High Resolution MRI Datasets. Lecture Notes in Computer Science, 2008, , 571-580.	1.0	8
141	openCARP: An Open Sustainable Framework for In-Silico Cardiac Electrophysiology Research. , 0, , .		8
142	Modelling the interaction between stem cells derived cardiomyocytes patches and host myocardium to aid non-arrhythmic engineered heart tissue design. PLoS Computational Biology, 2022, 18, e1010030.	1.5	8
143	Assessing influence of conductivity in heart modelling with the aim of studying cardiovascular diseases. Proceedings of SPIE, 2008, , .	0.8	7
144	A 2D-computer model of atrial tissue based on histographs describes the electro-anatomical impact of microstructure on endocardiac potentials and electric near-fields. , 2010, 2010, 2541-4.		7

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145	Mechanism of reentry induction by a 9-V battery in rabbit ventricles. American Journal of Physiology - Heart and Circulatory Physiology, 2014, 306, H1041-H1053.	1.5	7
146	Analysis of lead placement optimization metrics in cardiac resynchronization therapy with computational modelling. Europace, 2016, 18, iv113-iv120.	0.7	7
147	Generic Conduction Parameters for Predicting Activation Waves in Customised Cardiac Electrophysiology Models. Lecture Notes in Computer Science, 2010, , 252-260.	1.0	7
148	Cardiac Near-Field Morphology During Conduction Around a Microscopic Obstacleâ€"A Computer Simulation Study. Annals of Biomedical Engineering, 2003, 31, 1206-1212.	1.3	6
149	A Finite Element Formulation for Atrial Tissue Monolayer. Methods of Information in Medicine, 2008, 47, 131-139.	0.7	6
150	Estimation of Local Orientations in Fibrous Structures With Applications to the Purkinje System. IEEE Transactions on Biomedical Engineering, 2011, 58, 1762-1772.	2.5	6
151	Highly trabeculated structure of the human endocardium underlies asymmetrical response to low-energy monophasic shocks. Chaos, 2017, 27, 093913.	1.0	6
152	Inverse localization of earliest cardiac activation sites from activation maps based on the viscous Eikonal equation. Journal of Mathematical Biology, 2019, 79, 2033-2068.	0.8	6
153	Parallel and space-time adaptivity for the numerical simulation of cardiac action potentials. Applied Mathematics and Computation, 2019, 353, 406-417.	1.4	6
154	Impact of anatomical reverse remodelling in the design of optimal quadripolar pacing leads: A computational study. Computers in Biology and Medicine, 2022, 140, 105073.	3.9	6
155	AN ITERATIVE METHOD FOR REGISTRATION OF HIGH-RESOLUTION CARDIAC HISTOANATOMICAL AND MRI IMAGES. , 2007, , .		5
156	Accuracy of Local Conduction Velocity Determination from Non-Fractionated Cardiac Activation Signals. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 27-30.	0.5	5
157	PDE constrained optimization of electrical defibrillation in a 3D ventricular slice geometry. International Journal for Numerical Methods in Biomedical Engineering, 2016, 32, e02742.	1.0	5
158	A coupled monodomain solver with optimal memory usage for the simulation of cardiac wave propagation. Applied Mathematics and Computation, 2020, 378, 125212.	1.4	5
159	Automatic reconstruction of the left atrium activation from sparse intracardiac contact recordings by inverse estimate of fibre structure and anisotropic conduction in a patient-specific model. Europace, 2021, 23, i63-i70.	0.7	5
160	<scp>GEASI</scp>: Geodesicâ€based earliest activation sites identification in cardiac models. International Journal for Numerical Methods in Biomedical Engineering, 2021, 37, e3505.	1.0	5
161	Impact of Intraventricular Septal Fiber Orientation on Cardiac Electromechanical Function. American Journal of Physiology - Heart and Circulatory Physiology, 2022, , .	1.5	5
162	An automated near-real time computational method for induction and treatment of scar-related ventricular tachycardias. Medical Image Analysis, 2022, 80, 102483.	7.0	5

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163	P1-13. Heart Rhythm, 2006, 3, S111-S112.	0.3	4
164	A finite element approach for modeling micro-structural discontinuities in the heart. , 2011, 2011, 437-40.		4
165	Decomposition of fractionated local electrograms using an analytic signal model based on sigmoid functions. Biomedizinische Technik, 2012, 57, 371-82.	0.9	4
166	Non-invasive simulated electrical and measured mechanical indices predict response to cardiac resynchronization therapy. Computers in Biology and Medicine, 2021, 138, 104872.	3.9	4
167	Simulations of the Electrical Activity in the Heart with Graphic Processing Units. Lecture Notes in Computer Science, 2010, , 439-448.	1.0	4
168	Parallel space-time adaptive numerical simulation of 3D cardiac electrophysiology. Applied Numerical Mathematics, 2022, 173, 295-307.	1.2	4
169	The Role of Myocardial Fiber Direction in Epicardial Activation Patterns via Uncertainty Quantification. , 2021, 48, .		4
170	Predicting arrhythmia recurrence following catheter ablation for ventricular tachycardia using late gadolinium enhancement magnetic resonance imaging: Implications of varying scar ranges. Heart Rhythm, 2022, 19, 1604-1610.	0.3	4
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