

Stephen J Payne

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

136
papers

1,871
citations

22
h-index

36
g-index

160
ext. papers

2,317
ext. citations

3.2
avg. IF

5.18
L-index

#	Paper	IF	Citations
136	Synchronization between arterial blood pressure and cerebral oxyhaemoglobin concentration investigated by wavelet cross-correlation. <i>Physiological Measurement</i> , 2007 , 28, 161-73	2.9	118
135	Identifying the ischaemic penumbra using pH-weighted magnetic resonance imaging. <i>Brain</i> , 2015 , 138, 36-42	11.2	102
134	Cell death, perfusion and electrical parameters are critical in models of hepatic radiofrequency ablation. <i>International Journal of Hyperthermia</i> , 2015 , 31, 538-50	3.7	74
133	Comparing different analysis methods for quantifying the MRI amide proton transfer (APT) effect in hyperacute stroke patients. <i>NMR in Biomedicine</i> , 2014 , 27, 1019-29	4.4	66
132	Artificial neural networks applied to fetal monitoring in labour. <i>Neural Computing and Applications</i> , 2013 , 22, 85-93	4.8	49
131	A model of the interaction between autoregulation and neural activation in the brain. <i>Mathematical Biosciences</i> , 2006 , 204, 260-81	3.9	49
130	The effects of age on the spontaneous low-frequency oscillations in cerebral and systemic cardiovascular dynamics. <i>Physiological Measurement</i> , 2008 , 29, 1055-69	2.9	48
129	A three-state mathematical model of hyperthermic cell death. <i>Annals of Biomedical Engineering</i> , 2011 , 39, 570-9	4.7	44
128	Multivariate system identification for cerebral autoregulation. <i>Annals of Biomedical Engineering</i> , 2008 , 36, 308-20	4.7	44
127	Phase-rectified signal averaging for intrapartum electronic fetal heart rate monitoring is related to acidemia at birth. <i>BJOG: an International Journal of Obstetrics and Gynaecology</i> , 2014 , 121, 889-94	3.7	43
126	Between-centre variability in transfer function analysis, a widely used method for linear quantification of the dynamic pressure-flow relation: the CARNet study. <i>Medical Engineering and Physics</i> , 2014 , 36, 620-7	2.4	42
125	Quantitative Bayesian model-based analysis of amide proton transfer MRI. <i>Magnetic Resonance in Medicine</i> , 2013 , 70, 556-67	4.4	42
124	Wavelet phase synchronization analysis of cerebral blood flow autoregulation. <i>IEEE Transactions on Biomedical Engineering</i> , 2010 , 57, 960-8	5	40
123	Modelling of pH dynamics in brain cells after stroke. <i>Interface Focus</i> , 2011 , 1, 408-16	3.9	35
122	Modeling dispersion in arterial spin labeling: validation using dynamic angiographic measurements. <i>Magnetic Resonance in Medicine</i> , 2013 , 69, 563-70	4.4	33
121	Multi-scale homogenization of blood flow in 3-dimensional human cerebral microvascular networks. <i>Journal of Theoretical Biology</i> , 2015 , 380, 40-7	2.3	31
120	A mathematical framework for minimally invasive tumor ablation therapies. <i>Critical Reviews in Biomedical Engineering</i> , 2014 , 42, 383-417	1.1	30

119	Monitoring fetal maturation-objectives, techniques and indices of autonomic function. <i>Physiological Measurement</i> , 2017 , 38, R61-R88	2.9	29
118	A two-equation coupled system for determination of liver tissue temperature during thermal ablation. <i>International Journal of Heat and Mass Transfer</i> , 2011 , 54, 2100-2109	4.9	28
117	Feature selection using genetic algorithms for fetal heart rate analysis. <i>Physiological Measurement</i> , 2014 , 35, 1357-71	2.9	25
116	A physiological model of the release of gas bubbles from crevices under decompression. <i>Respiratory Physiology and Neurobiology</i> , 2006 , 153, 166-80	2.8	24
115	Modeling the cycles of growth and detachment of bubbles in carbonated beverages. <i>Journal of Physical Chemistry B</i> , 2006 , 110, 7579-86	3.4	23
114	A fast analysis method for non-invasive imaging of blood flow in individual cerebral arteries using vessel-encoded arterial spin labelling angiography. <i>Medical Image Analysis</i> , 2012 , 16, 831-9	15.4	22
113	The effect of cavity geometry on the nucleation of bubbles from cavities. <i>Journal of the Acoustical Society of America</i> , 2007 , 121, 853-62	2.2	22
112	Investigating the effects of a penetrating vessel occlusion with a multi-scale microvasculature model of the human cerebral cortex. <i>NeuroImage</i> , 2018 , 172, 94-106	7.9	21
111	. <i>IEEE Transactions on Control Systems Technology</i> , 2017 , 25, 2112-2120	4.8	20
110	Evaluating the use of a continuous approximation for model-based quantification of pulsed chemical exchange saturation transfer (CEST). <i>Journal of Magnetic Resonance</i> , 2012 , 222, 88-95	3	20
109	The effect of temperature and viscoelasticity on cavitation dynamics during ultrasonic ablation. <i>Journal of the Acoustical Society of America</i> , 2011 , 130, 3458-66	2.2	20
108	Quantification of amide proton transfer effect pre- and post-gadolinium contrast agent administration. <i>Journal of Magnetic Resonance Imaging</i> , 2014 , 40, 832-8	5.6	19
107	Effects of autoregulation and CO ₂ reactivity on cerebral oxygen transport. <i>Annals of Biomedical Engineering</i> , 2009 , 37, 2288-98	4.7	19
106	Combined transfer function analysis and modelling of cerebral autoregulation. <i>Annals of Biomedical Engineering</i> , 2006 , 34, 847-58	4.7	19
105	Reproducibility of dynamic cerebral autoregulation parameters: a multi-centre, multi-method study. <i>Physiological Measurement</i> , 2018 , 39, 125002	2.9	19
104	Mathematical model of the effect of ischemia-reperfusion on brain capillary collapse and tissue swelling. <i>Mathematical Biosciences</i> , 2015 , 263, 111-20	3.9	18
103	The effects of respiratory CO ₂ fluctuations in the resting-state BOLD signal differ between eyes open and eyes closed. <i>Magnetic Resonance Imaging</i> , 2013 , 31, 336-45	3.3	18
102	Computerized fetal heart rate analysis in labor: detection of intervals with un-assignable baseline. <i>Physiological Measurement</i> , 2011 , 32, 1549-60	2.9	18

101	Dynamic Cerebral Autoregulation Reproducibility Is Affected by Physiological Variability. <i>Frontiers in Physiology</i> , 2019 , 10, 865	4.6	17
100	Optimal sampling schedule for chemical exchange saturation transfer. <i>Magnetic Resonance in Medicine</i> , 2013 , 70, 1251-62	4.4	17
99	A generalized mathematical framework for estimating the residue function for arbitrary vascular networks. <i>Interface Focus</i> , 2013 , 3, 20120078	3.9	16
98	A porous circulation model of the human brain for clinical trials in ischaemic stroke. <i>Interface Focus</i> , 2021 , 11, 20190127	3.9	16
97	Optimizing image registration and infarct definition in stroke research. <i>Annals of Clinical and Translational Neurology</i> , 2017 , 4, 166-174	5.3	15
96	Modelling the effects of cerebral microvasculature morphology on oxygen transport. <i>Medical Engineering and Physics</i> , 2016 , 38, 41-7	2.4	15
95	Increased blood pressure variability upon standing up improves reproducibility of cerebral autoregulation indices. <i>Medical Engineering and Physics</i> , 2017 , 47, 151-158	2.4	15
94	A control point interpolation method for the non-parametric quantification of cerebral haemodynamics from dynamic susceptibility contrast MRI. <i>NeuroImage</i> , 2013 , 64, 560-70	7.9	15
93	Effects of arterial blood gas levels on cerebral blood flow and oxygen transport. <i>Biomedical Optics Express</i> , 2011 , 2, 966	3.5	15
92	Modeling the effects of flow dispersion in arterial spin labeling. <i>IEEE Transactions on Biomedical Engineering</i> , 2009 , 56, 1635-43	5	15
91	Unsteady loss in a high pressure turbine stage. <i>International Journal of Heat and Fluid Flow</i> , 2003 , 24, 698-708	2.4	15
90	The Dual Role of Cerebral Autoregulation and Collateral Flow in the Circle of Willis After Major Vessel Occlusion. <i>IEEE Transactions on Biomedical Engineering</i> , 2017 , 64, 1793-1802	5	14
89	Cerebral Blood Flow and Metabolism 2017 ,		14
88	Coupling one-dimensional arterial blood flow to three-dimensional tissue perfusion models for trials of acute ischaemic stroke. <i>Interface Focus</i> , 2021 , 11, 20190125	3.9	14
87	Modeling and correction of bolus dispersion effects in dynamic susceptibility contrast MRI. <i>Magnetic Resonance in Medicine</i> , 2014 , 72, 1762-74	4.4	13
86	Comparing model-based and model-free analysis methods for QUASAR arterial spin labeling perfusion quantification. <i>Magnetic Resonance in Medicine</i> , 2013 , 69, 1466-75	4.4	13
85	A method for the automated detection of venous gas bubbles in humans using empirical mode decomposition. <i>Annals of Biomedical Engineering</i> , 2005 , 33, 1411-21	4.7	13
84	A statistical model of the penetrating arterioles and venules in the human cerebral cortex. <i>Microcirculation</i> , 2016 , 23, 580-590	2.9	13

83	A model of tissue contraction during thermal ablation. <i>Physiological Measurement</i> , 2016 , 37, 1474-84	2.9	12
82	Mathematical modeling of thermal ablation. <i>Critical Reviews in Biomedical Engineering</i> , 2010 , 38, 21-30	1.1	12
81	A physiological model of gas pockets in crevices and their behavior under compression. <i>Respiratory Physiology and Neurobiology</i> , 2006 , 152, 100-14	2.8	12
80	Analysis of the effects of gravity and wall thickness in a model of blood flow through axisymmetric vessels. <i>Medical and Biological Engineering and Computing</i> , 2004 , 42, 799-806	3.1	12
79	A model for the optimization of anti-inflammatory treatment with chemerin. <i>Interface Focus</i> , 2018 , 8, 20170007	3.9	12
78	Doppler-based fetal heart rate analysis markers for the detection of early intrauterine growth restriction. <i>Acta Obstetrica Et Gynecologica Scandinavica</i> , 2017 , 96, 1322-1329	3.8	11
77	A thermoelastic deformation model of tissue contraction during thermal ablation. <i>International Journal of Hyperthermia</i> , 2018 , 34, 221-228	3.7	10
76	Automated classification and analysis of the calcium response of single T lymphocytes using a neural network approach. <i>IEEE Transactions on Neural Networks</i> , 2005 , 16, 949-58		10
75	Effects of arterial blood gas levels on cerebral blood flow and oxygen transport. <i>Biomedical Optics Express</i> , 2011 , 2, 966-79	3.5	10
74	Bayesian Inference in Non-Markovian State-Space Models With Applications to Battery Fractional-Order Systems. <i>IEEE Transactions on Control Systems Technology</i> , 2018 , 26, 497-506	4.8	9
73	At what data length do cerebral autoregulation measures stabilise?. <i>Physiological Measurement</i> , 2017 , 38, 1396-1404	2.9	9
72	Relation of fetal heart rate signals with unassignable baseline to poor neonatal state at birth. <i>Medical and Biological Engineering and Computing</i> , 2012 , 50, 717-25	3.1	9
71	Assessment of dynamic cerebral autoregulation in humans: Is reproducibility dependent on blood pressure variability?. <i>PLoS ONE</i> , 2020 , 15, e0227651	3.7	8
70	Dynamics of gas bubbles in time-variant temperature fields. <i>Journal of Fluid Mechanics</i> , 2010 , 663, 209-237		8
69	A physiological model of the interaction between tissue bubbles and the formation of blood-borne bubbles under decompression. <i>Physics in Medicine and Biology</i> , 2006 , 51, 2321-38	3.8	8
68	Reliability, reproducibility and validity of dynamic cerebral autoregulation in a large cohort with transient ischaemic attack or minor stroke. <i>Physiological Measurement</i> , 2020 , 41, 095002	2.9	8
67	Oxygen delivery from the cerebral microvasculature to tissue is governed by a single time constant of approximately 6 seconds. <i>Microcirculation</i> , 2018 , 25, e12428	2.9	8
66	Dynamic Changes in Microvascular Flow Conductivity and Perfusion After Myocardial Infarction Shown by Image-Based Modeling. <i>Journal of the American Heart Association</i> , 2019 , 8, e011058	6	7

65	Comparison of three artificial models of the magnetohydrodynamic effect on the electrocardiogram. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2015 , 18, 1400-17	2.1	7
64	INFOMATAS multi-center systematic review and meta-analysis individual patient data of dynamic cerebral autoregulation in ischemic stroke. <i>International Journal of Stroke</i> , 2020 , 15, 807-812	6.3	7
63	Computerised electronic foetal heart rate monitoring in labour: automated contraction identification. <i>Medical and Biological Engineering and Computing</i> , 2009 , 47, 1315-20	3.1	7
62	Comment on 'Estimating a modified Grubb's exponent in healthy human brains with near infrared spectroscopy and transcranial Doppler'. <i>Physiological Measurement</i> , 2009 , 30, L9-L11; author reply L13-L14	2.9	6
61	The study of the function of AQP4 in cerebral ischaemia-reperfusion injury using poroelastic theory. <i>International Journal for Numerical Methods in Biomedical Engineering</i> , 2017 , 33, e02784	2.6	5
60	A purpose-built neck coil for black-blood DANTE-prepared carotid artery imaging at 7T. <i>Magnetic Resonance Imaging</i> , 2017 , 40, 53-61	3.3	5
59	Modelling mixing within the dead space of the lung improves predictions of functional residual capacity. <i>Respiratory Physiology and Neurobiology</i> , 2017 , 242, 12-18	2.8	5
58	Modelling dynamic changes in blood flow and volume in the cerebral vasculature. <i>NeuroImage</i> , 2018 , 176, 124-137	7.9	5
57	Modeling the residue function in DSC-MRI simulations: analytical approximation to in vivo data. <i>Magnetic Resonance in Medicine</i> , 2014 , 72, 1486-91	4.4	5
56	Modelling the effects of cardiac pulsations in arterial spin labelling. <i>Physics in Medicine and Biology</i> , 2010 , 55, 799-816	3.8	5
55	A two phase model of oxygen transport in cerebral tissue. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , 2009 , 2009, 4921-4	0.9	5
54	Automated Fetal Heart Rate Analysis in Labor: Decelerations and Overshoots 2010 ,		5
53	Unsteady loss in a high pressure turbine stage: Interaction effects. <i>International Journal of Heat and Fluid Flow</i> , 2005 , 26, 695-708	2.4	5
52	Modelling the impact of clot fragmentation on the microcirculation after thrombectomy. <i>PLoS Computational Biology</i> , 2021 , 17, e1008515	5	5
51	Feature selection for computerized fetal heart rate analysis using genetic algorithms. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , 2013 , 2013, 445-8	0.9	4
50	Effects of non-physiological blood pressure artefacts on cerebral autoregulation. <i>Medical Engineering and Physics</i> , 2017 , 47, 218-221	2.4	4
49	Computerized intrapartum electronic fetal monitoring: analysis of the decision to deliver for fetal distress. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , 2011 , 2011, 5888-91	0.9	4
48	A two-equation coupled system model for determination of liver tissue temperature during radio frequency ablation. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , 2009 , 2009, 2883-6	0.9	4

47	A tidal lung simulation to quantify lung heterogeneity with the Inspired Sinewave Test. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference</i> , 2020 , 2020, 2438-2441	0.9	4
46	Identifying the myogenic and metabolic components of cerebral autoregulation. <i>Medical Engineering and Physics</i> , 2018 ,	2.4	3
45	High-resolution contrast enhanced multi-phase hepatic Computed Tomography data from porcine Radio-Frequency Ablation study 2014 ,		3
44	Vasomotion does inhibit mass exchange between axisymmetric blood vessels and tissue. <i>Journal of Theoretical Biology</i> , 2012 , 302, 1-5	2.3	3
43	A mathematical model of cellular swelling in Neuromyelitis optica. <i>Journal of Theoretical Biology</i> , 2017 , 433, 39-48	2.3	3
42	A mathematical model of cellular metabolism during ischemic stroke and hypothermia. <i>IEEE Transactions on Biomedical Engineering</i> , 2014 , 61, 484-90	5	3
41	Effect of temperature on rectified diffusion during ultrasound-induced heating. <i>Journal of the Acoustical Society of America</i> , 2011 , 130, 3450-7	2.2	3
40	Lung heterogeneity and deadspace volume in animals with acute respiratory distress syndrome using the inspired sinewave test. <i>Physiological Measurement</i> , 2020 , 41,	2.9	3
39	The INfoMATAS project: Methods for assessing cerebral autoregulation in stroke. <i>Journal of Cerebral Blood Flow and Metabolism</i> , 2021 , 271678X211029049	7.3	3
38	Automated determination of bubble grades from Doppler ultrasound recordings. <i>Aviation, Space, and Environmental Medicine</i> , 2005 , 76, 771-7		3
37	The Action Potential. <i>Biosystems and Biorobotics</i> , 2016 , 33-41	0.2	2
36	Mathematical model of the post-ablation enhancement zone as a tissue-level oedematic response. <i>International Journal of Hyperthermia</i> , 2017 , 33, 111-121	3.7	2
35	Go-Smart: Web-based computational modeling of minimally invasive cancer treatments 2015 ,		2
34	Modeling the detachment and transport of bubbles from nucleation sites in small vessels. <i>IEEE Transactions on Biomedical Engineering</i> , 2007 , 54, 2106-8	5	2
33	Validation of a Web-Based Planning Tool for Percutaneous Cryoablation of Renal Tumors. <i>CardioVascular and Interventional Radiology</i> , 2020 , 43, 1661-1670	2.7	2
32	On the Sensitivity Analysis of Porous Finite Element Models for Cerebral Perfusion Estimation. <i>Annals of Biomedical Engineering</i> , 2021 , 1	4.7	2
31	Modelling the effects of cerebral microthrombi on tissue oxygenation and cell death		2
30	Effects of Brain Tissue Mechanical and Fluid Transport Properties during Ischaemic Brain Oedema: A Poroelastic Finite Element Analysis 2018 ,		2

29	Modelling the effects of cerebral microthrombi on tissue oxygenation and cell death. <i>Journal of Biomechanics</i> , 2021 , 127, 110705	2.9	2
28	A model for generating synthetic arterial blood pressure. <i>Physiological Measurement</i> , 2017 , 38, 477-488	2.9	1
27	Autoregulating Cerebral Tissue Selfishly Exploits Collateral Flow Routes Through the Circle of Willis. <i>Acta Neurochirurgica Supplementum</i> , 2018 , 126, 275-279	1.7	1
26	An Introduction to Brain Tumor Imaging. <i>Tumors of the Central Nervous System</i> , 2014 , 3-20		1
25	A two-layer model of the static behaviour of blood vessel walls. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society</i> , 2004 , 2004, 3692-5		1
24	Modelling the impact of clot fragmentation on the microcirculation after thrombectomy		1
23	Searching for the stimulus controlling brain oxygen supply. <i>Journal of Physiology</i> , 2020 , 598, 617-618	3.9	1
22	Investigating the role of pericytes in cerebral autoregulation: a modeling study. <i>Physiological Measurement</i> , 2021 , 42,	2.9	1
21	Simulation-based optimisation to quantify heterogeneity of specific ventilation and perfusion in the lung by the Inspired Sinewave Test. <i>Scientific Reports</i> , 2021 , 11, 12627	4.9	1
20	Validating the Inspired Sinewave Technique to Measure Lung Heterogeneity Compared to Atelectasis & Over-Distended Volume in Computed Tomography Images 2021 ,		1
19	Continuous positive airway pressure might not solve your cerebral autoregulation problem if you have obstructive sleep apnoea. <i>Journal of Physiology</i> , 2016 , 594, 6803	3.9	1
18	Two-Way Coupling Between 1D Blood Flow and 3D Tissue Perfusion Models. <i>Lecture Notes in Computer Science</i> , 2021 , 670-683	0.9	1
17	A multiscale model of cerebral autoregulation. <i>Medical Engineering and Physics</i> , 2021 , 95, 51-63	2.4	1
16	The Ageing Brain: Investigating the Role of Age in Changes to the Human Cerebral Microvasculature With an Model. <i>Frontiers in Aging Neuroscience</i> , 2021 , 13, 632521	5.3	0
15	Mathematical modelling of haemorrhagic transformation after ischaemic stroke. <i>Journal of Theoretical Biology</i> , 2021 , 531, 110920	2.3	0
14	In silico trials for treatment of acute ischemic stroke: Design and implementation. <i>Computers in Biology and Medicine</i> , 2021 , 137, 104802	7	0
13	Thrombus growth modelling and stenosis prediction in the cerebral microvasculature. <i>Journal of Theoretical Biology</i> , 2019 , 478, 1-13	2.3	
12	AuthorsTreply: Computerised interpretation of fetal heart rate patterns and correlation with fetal acidemia. <i>BJOG: an International Journal of Obstetrics and Gynaecology</i> , 2014 , 121, 1747-8	3.7	

- 11 A three-state non-linear model of vascular Nitric Oxide transport. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference, 2009, 2009, 4917-20* 0.9
- 10 The effects of non-linearities on shear stress in periodic flow in axi-symmetric vessels. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference, 2009, 2009, 3944-7* 0.9
- 9 1-D steady state analysis of a two-equation coupled system for determination of tissue temperature in liver during radio frequency ablation. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference, 2009, 2009, 3385-8* 0.9
- 8 The response of hepatocyte cell volume to hyperthermia and its role in oedema. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference, 2011, 2011, 4305-8* 0.9
- 7 High-Frequency Effects in the Aspirating Probe. *Journal of Turbomachinery, 2007, 129, 842-851* 1.8
- 6 Lung simulation to support non-invasive pulmonary blood flow measurement in Acute Respiratory Distress Syndrome in animals. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference, 2021, 2021, 71-76* 0.9
- 5 METHODS IN THE ANALYSIS OF THE EFFECTS OF GRAVITY AND WALL PROPERTIES IN BLOOD FLOW THROUGH VASCULAR SYSTEMS **2007**, 207-232
- 4 Assessment of dynamic cerebral autoregulation in humans: Is reproducibility dependent on blood pressure variability? **2020**, 15, e0227651
- 3 Assessment of dynamic cerebral autoregulation in humans: Is reproducibility dependent on blood pressure variability? **2020**, 15, e0227651
- 2 Assessment of dynamic cerebral autoregulation in humans: Is reproducibility dependent on blood pressure variability? **2020**, 15, e0227651
- 1 Assessment of dynamic cerebral autoregulation in humans: Is reproducibility dependent on blood pressure variability? **2020**, 15, e0227651