Ciaran K Simms

List of Publications by Year
in descending order

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93 papers	2,745 citations	172457 29 h-index	206112 48 g-index
93 all docs	93 docs citations	93 times ranked	2284 citing authors

#	Article	IF	Citations
1	Viscoelastic properties of passive skeletal muscle in compression: Stress-relaxation behaviour and constitutive modelling. Journal of Biomechanics, 2008, 41, 1555-1566.	2.1	181
2	A validated model of passive muscle in compression. Journal of Biomechanics, 2006, 39, 2999-3009.	2.1	175
3	The anisotropic mechanical behaviour of passive skeletal muscle tissue subjected to large tensile strain. Journal of the Mechanical Behavior of Biomedical Materials, 2013, 17, 209-220.	3.1	127
4	The fracture toughness of soft tissues. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 6, 139-147.	3.1	126
5	Digital image correlation and finite element modelling as a method to determine mechanical properties of human soft tissue in vivo. Journal of Biomechanics, 2009, 42, 1150-1153.	2.1	116
6	Mechanisms of ACL injury in professional rugby union: a systematic video analysis of 36 cases. British Journal of Sports Medicine, 2018, 52, 994-1001.	6.7	101
7	A 12-month prospective cohort study of injury in international rowers. British Journal of Sports Medicine, 2010, 44, 207-214.	6.7	97
8	The influence of vehicle front-end design on pedestrian ground impact. Accident Analysis and Prevention, 2015, 79, 56-69.	5.7	78
9	Viscoelastic properties of passive skeletal muscle in compressionâ€”Cyclic behaviour. Journal of Biomechanics, 2009, 42, 1038-1048.	2.1	77
10	A structural model of passive skeletal muscle shows two reinforcement processes in resisting deformation. Journal of the Mechanical Behavior of Biomedical Materials, 2013, 22, 84-94.	3.1	67
11	Effects of pre-impact pedestrian position and motion on kinematics and injuries from vehicle and ground contact. International Journal of Crashworthiness, 2006, 11, 345-355.	1.9	66
12	Pedestrian head translation, rotation and impact velocity: The influence of vehicle speed, pedestrian speed and pedestrian gait. Accident Analysis and Prevention, 2012, 45, 342-353.	5.7	56
13	Schoolbag carriage and schoolbag-related musculoskeletal discomfort among primary school children. Applied Ergonomics, 2015, 51, 281-290.	3.1	52
14	Schoolbag Weight Limit: Can It Be Defined?. Journal of School Health, 2013, 83, 368-377.	1.6	49
15	Non-collision injuries in urban busesâ€”Strategies for prevention. Accident Analysis and Prevention, 2009, 41, 1-9.	5.7	47
16	Uniaxial and biaxial mechanical properties of porcine linea alba. Journal of the Mechanical Behavior of Biomedical Materials, 2015, 41, 68-82.	3.1	44
17	Pedestrian Risk from Cars and Sport Utility Vehicles - A Comparative Analytical Study. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, 2006, 220, 1085-1100.	1.9	43
18	The influence of passenger car front shape on pedestrian injury risk observed from German in-depth accident data. Accident Analysis and Prevention, 2017, 101, 11-21.	5.7	42

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19	The in vitro passive elastic response of chicken pectoralis muscle to applied tensile and compressive deformation. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 62, 468-480.	3.1	41
20	Control of tensionâ€“compression asymmetry in Ogden hyperelasticity with application to soft tissue modelling. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 56, 218-228.	3.1	41
21	Vehicle-pedestrian collisions: Validated models for pedestrian impact and projection. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, 2005, 219, 183-195.	1.9	40
22	Car size and injury risk: a model for injury risk in frontal collisions. Accident Analysis and Prevention, 2002, 34, 93-99.	5.7	39
23	Safer passenger car front shapes for pedestrians: A computational approach to reduce overall pedestrian injury risk in realistic impact scenarios. Accident Analysis and Prevention, 2017, 100, 97-110.	5.7	39
24	Risks associated with significant head impact events in elite rugby union. Brain Injury, 2016, 30, 1350-1361.	1.2	38
25	Uniaxial and biaxial tensile stressâ€“stretch response of human linea alba. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 63, 134-140.	3.1	35
26	A novel MRI compatible soft tissue indentor and fibre Bragg grating force sensor. Medical Engineering and Physics, 2013, 35, 486-499.	1.7	34
27	Sagittal plane motion of the lumbar spine during ergometer and single scull rowing. Sports Biomechanics, 2013, 12, 132-142.	1.6	34
28	The influence of gait stance on pedestrian lower limb injury risk. Accident Analysis and Prevention, 2015, 85, 83-92.	5.7	34
29	Fibre orientation of fresh and frozen porcine aorta determined non-invasively using diffusion tensor imaging. Medical Engineering and Physics, 2013, 35, 765-776.	1.7	30
30	Have pedestrian subsystem tests improved passenger car front shape?. Accident Analysis and Prevention, 2018, 115, 143-150.	5.7	30
31	Mechanical characterisation of porcine rectus sheath under uniaxial and biaxial tension. Journal of Biomechanics, 2014, 47, 1876-1884.	2.1	29
32	Detailed assessment of pedestrian ground contact injuries observed from in-depth accident data. Accident Analysis and Prevention, 2018, 110, 9-17.	5.7	29
33	The influence of estimated body segment parameters on predicted joint kinetics during diplegic cerebral palsy gait. Journal of Biomechanics, 2014, 47, 284-288.	2.1	26
34	The effects of tackle height on inertial loading of the head and neck in Rugby Union: A multibody model analysis. Brain Injury, 2017, 31, 1925-1931.	1.2	26
35	A continuum model for tension-compression asymmetry in skeletal muscle. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 77, 455-460.	3.1	25
36	Biomechanical abdominal wall model applied to hernia repair. British Journal of Surgery, 2015, 102, e133-e139.	0.3	24

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37	The effect of technique on tackle gainline success outcomes in elite level rugby union. International Journal of Sports Science and Coaching, 2018, 13, 16-25.	1.4	24
38	Passive skeletal muscle response to impact loading: Experimental testing and inverse modelling. Journal of the Mechanical Behavior of Biomedical Materials, 2013, 27, 214-225.	3.1	23
39	Could lowering the tackle height in rugby union reduce ball carrier inertial head kinematics?. Journal of Biomechanics, 2018, 72, 29-36.	2.1	23
40	Guidelines for schoolbag carriage: An appraisal of safe load limits for schoolbag weight and duration of carriage. Work, 2016, 53, 679-688.	1.1	22
41	Collagen fibril organization in chicken and porcine skeletal muscle perimysium under applied tension and compression. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 77, 734-744.	3.1	22
42	The predictive capacity of the MADYMO ellipsoid pedestrian model for pedestrian ground contact kinematics and injury evaluation. Accident Analysis and Prevention, 2021, 149, 105803.	5.7	22
43	Confidence limits for impact speed estimation from pedestrian projection distance. International Journal of Crashworthiness, 2004, 9, 219-228.	1.9	21
44	Validation of continuously tagged MRI for the measurement of dynamic 3D skeletal muscle tissue deformation. Medical Physics, 2012, 39, 1793-1810.	3.0	21
45	The clinical impact of hip joint centre regression equation error on kinematics and kinetics during paediatric gait. Gait and Posture, 2015, 41, 175-179.	1.4	21
46	Does player time-in-game affect tackle technique in elite level rugby union?. Journal of Science and Medicine in Sport, 2018, 21, 221-225.	1.3	21
47	Assessment of model-based image-matching for future reconstruction of unhelmeted sport head impact kinematics. Sports Biomechanics, 2018, 17, 33-47.	1.6	20
48	Potential benefits of controlled vehicle braking to reduce pedestrian ground contact injuries. Accident Analysis and Prevention, 2019, 129, 94-107.	5.7	20
49	A 3-dimensional rigid cluster thorax model for kinematic measurements during gait. Journal of Biomechanics, 2014, 47, 1499-1505.	2.1	19
50	The effect of rowing to exhaustion on frontal plane angular changes in the lumbar spine of elite rowers. Journal of Sports Sciences, 2012, 30, 1481-1489.	2.0	18
51	Characteristics of pedestrian head injuries observed from real world collision data. Accident Analysis and Prevention, 2019, 129, 362-366.	5.7	18
52	Imaging Arterial Fibres Using Diffusion Tensor Imagingâ€"Feasibility Study and Preliminary Results. Eurasip Journal on Advances in Signal Processing, 2010, 2010, .	1.7	17
53	The suture pullout characteristics of human and porcine linea alba. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 68, 103-114.	3.1	15
54	A hybrid model for pedestrian impact and projection. International Journal of Crashworthiness, 2000, 5, 393-404.	1.9	14

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55	Validation of SPAMM tagged MRI based measurement of 3D soft tissue deformation. Medical Physics, 2011, 38, 1248-1260.	3.0	14
56	SKELETAL MUSCLE IN COMPRESSION: MODELING APPROACHES FOR THE PASSIVE MUSCLE BULK. International Journal for Multiscale Computational Engineering, 2012, 10, 143-154.	1.2	14
57	Assessing the microstructural response to applied deformation in porcine passive skeletal muscle. Journal of the Mechanical Behavior of Biomedical Materials, 2014, 40, 115-126.	3.1	13
58	Impact characteristics of a vehicle population in low speed front to rear collisions. Accident Analysis and Prevention, 2015, 79, 1-12.	5.7	13
59	A virtual test system representing the distribution of pedestrian impact configurations for future vehicle front-end optimization. Traffic Injury Prevention, 2016, 17, 515-523.	1.4	13
60	Predictive Capacity of the MADYMO Multibody Human Body Model Applied to Head Kinematics During Rugby Union Tackles. Applied Sciences (Switzerland), 2019, 9, 726.	2.5	13
61	Kinematics and dynamics of pedestrian head ground contact: A cadaver study. Safety Science, 2020, 127, 104684.	4.9	13
62	Torsion of monofilament and polyfilament sutures under tension decreases suture strength and increases risk of suture fracture. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 12, 168-173.	3.1	12
63	Limits for survivability in frontal collisions: Theory and real-life data combined. Accident Analysis and Prevention, 2007, 39, 679-687.	5.7	11
64	Assessment of the impact speed and angle conditions for the EN1317 barrier tests. International Journal of Crashworthiness, 2016, 21, 211-221.	1.9	11
65	Configurations of underreported cyclist-motorised vehicle and single cyclist collisions: Analysis of a self-reported survey. Accident Analysis and Prevention, 2021, 159, 106264.	5.7	11
66	Predictive capabilities of the MADYMO multibody pedestrian model: Three-dimensional head translation and rotation, head impact time and head impact velocity. Proceedings of the Institution of Mechanical Engineers, Part K: Journal of Multi-body Dynamics, 2012, 226, 266-277.	0.8	9
67	Multibody modelling of gabion beams for impact applications. International Journal of Crashworthiness, 2013, 18, 237-250.	1.9	9
68	Pathological Movements of the Pelvis and Trunk During Gait in Children With Cerebral Palsy: A Cross-Sectional Study With 3-Dimensional Kinematics and Lower Lumbar Spinal Loading. Physical Therapy, 2018, 98, 86-94.	2.4	9
69	â€œChildren with cerebral palsy experience greater levels of loading at the low back during gait compared to healthy controlsâ€• Gait and Posture, 2016, 48, 249-255.	1.4	8
70	A quantitative comparison of two kinematic protocols for lumbar segment motion during gait. Gait and Posture, 2015, 41, 699-705.	1.4	6
71	Visualisation of Collagen in fixed skeletal muscle tissue using fluorescently tagged Collagen binding protein CNA35. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 66, 37-44.	3.1	6
72	Evaluation of a Validation Method for MR Imaging-Based Motion Tracking Using Image Simulation. Eurasip Journal on Advances in Signal Processing, 2009, 2010, .	1.7	5

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73	Special issue on skin mechanobiology. Journal of the Mechanical Behavior of Biomedical Materials, 2013, 28, 395-396.	3.1	5
74	Extrusion properties of porcine intestines and surrogate materials for ventral hernia modelling. Journal of the Mechanical Behavior of Biomedical Materials, 2013, 18, 57-66.	3.1	5
75	Gabions: evaluation of potential as low-cost roadside barriers. International Journal of Crashworthiness, 2015, 20, 12-26.	1.9	5
76	The influence of physical dimension on apparent stressâ€“strain behaviour of in vitro passive skeletal muscle samples. Journal of Strain Analysis for Engineering Design, 2017, 52, 3-11.	1.8	5
77	Frontal collision behaviour: Comparison of onboard collision recorder data with car population characteristics. International Journal of Crashworthiness, 2005, 10, 61-73.	1.9	3
78	A scaling method for modelling the crashworthiness of novel roadside barrier designs. International Journal of Crashworthiness, 2013, 18, 93-102.	1.9	3
79	Predicting the pedestrian pre-impact speed from the pedestrian projection distance and vehicle damage measurements. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, 2013, 227, 164-178.	1.9	3
80	Applications and limitations of wrap-around ratio to vehicle speed estimation in pedestrian collision analysis. International Journal of Crashworthiness, 2013, 18, 288-305.	1.9	3
81	Guidelines on schoolbag use: MessagingÂtoÂinform the stakeholders. Work, 2016, 54, 489-492.	1.1	3
82	Parental awareness of schoolbag carriage: A comparative study of Irish and United States parents. Work, 2017, 58, 85-93.	1.1	3
83	Can tackle height influence tackle gainline success outcomes in elite level rugby union?. International Journal of Sports Science and Coaching, 2018, 13, 415-420.	1.4	3
84	Itâ€™s not all about power: a systematic review and meta-analysis comparing sex-based differences in kicking biomechanics in soccer. Sports Biomechanics, 2021, , 1-44.	1.6	3
85	Multibody modelling of a TB31 and a TB32 crash test with vertical portable concrete barriers: Model verification and sensitivity analysis. Proceedings of the Institution of Mechanical Engineers, Part K: Journal of Multi-body Dynamics, 2013, 227, 245-260.	0.8	2
86	A static test method to assess swivel seat strength in frontal impact. International Journal of Crashworthiness, 2014, 19, 469-483.	1.9	2
87	On the feasibility of life-saving locomotive bumpers. Accident Analysis and Prevention, 2016, 89, 103-110.	5.7	2
88	Three-dimensional lumbar segment movement characteristics during paediatric cerebral palsy gait. Gait and Posture, 2017, 53, 41-47.	1.4	2
89	Rear-impact neck protection devices for adult wheelchair users. Journal of Rehabilitation Research and Development, 2009, 46, 499.	1.6	2
90	A scaling method for modelling the crashworthiness of novel roadside barrier designs. International Journal of Crashworthiness, 2013, 18, 317-317.	1.9	1

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91	Anatomy transformed. Journal of Anatomy, 2019, 234, 577-582.	1.5	1
92	Editorial. Journal of the Mechanical Behavior of Biomedical Materials, 2011, 4, 1571.	3.1	0
93	Editorial. Journal of the Mechanical Behavior of Biomedical Materials, 2015, 41, 221.	3.1	0