

Michael GÃ¼nther

List of Publications by Year in descending order

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Version: 2024-02-01

63
papers

2,627
citations

236612

25
h-index

197535

49
g-index

70
all docs

70
docs citations

70
times ranked

1471
citing authors

#	ARTICLE	IF	CITATIONS
1	A movement criterion for running. <i>Journal of Biomechanics</i> , 2002, 35, 649-655.	0.9	410
2	Intelligence by mechanics. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2007, 365, 199-220.	1.6	183
3	Joint stiffness of the ankle and the knee in running. <i>Journal of Biomechanics</i> , 2002, 35, 1459-1474.	0.9	169
4	Hill-type muscle model with serial damping and eccentric force-velocity relation. <i>Journal of Biomechanics</i> , 2014, 47, 1531-1536.	0.9	136
5	Synthesis of two-dimensional human walking: a test of the γ -model. <i>Biological Cybernetics</i> , 2003, 89, 89-106.	0.6	111
6	Running on uneven ground: leg adjustment to vertical steps and self-stability. <i>Journal of Experimental Biology</i> , 2008, 211, 2989-3000.	0.8	107
7	Stable operation of an elastic three-segment leg. <i>Biological Cybernetics</i> , 2001, 84, 365-382.	0.6	96
8	High-frequency oscillations as a consequence of neglected serial damping in Hill-type muscle models. <i>Biological Cybernetics</i> , 2007, 97, 63-79.	0.6	84
9	A model-experiment comparison of system dynamics for human walking and running. <i>Journal of Theoretical Biology</i> , 2012, 292, 11-17.	0.8	77
10	Impulsive ankle push-off powers leg swing in human walking. <i>Journal of Experimental Biology</i> , 2014, 217, 1218-28.	0.8	68
11	DEALING WITH SKIN MOTION AND WOBBLING MASSES IN INVERSE DYNAMICS. <i>Journal of Mechanics in Medicine and Biology</i> , 2003, 03, 309-335.	0.3	66
12	A forward dynamics simulation of human lumbar spine flexion predicting the load sharing of intervertebral discs, ligaments, and muscles. <i>Biomechanics and Modeling in Mechanobiology</i> , 2015, 14, 1081-1105.	1.4	66
13	All leg joints contribute to quiet human stance: A mechanical analysis. <i>Journal of Biomechanics</i> , 2009, 42, 2739-2746.	0.9	64
14	Muscle force depends on the amount of transversal muscle loading. <i>Journal of Biomechanics</i> , 2014, 47, 1822-1828.	0.9	63
15	Quantifying control effort of biological and technical movements: An information-entropy-based approach. <i>Physical Review E</i> , 2014, 89, 012716.	0.8	61
16	ELECTRO-MECHANICAL DELAY IN HILL-TYPE MUSCLE MODELS. <i>Journal of Mechanics in Medicine and Biology</i> , 2012, 12, 1250085.	0.3	58
17	Comparative Sensitivity Analysis of Muscle Activation Dynamics. <i>Computational and Mathematical Methods in Medicine</i> , 2015, 2015, 1-16.	0.7	46
18	Human leg impact: energy dissipation of wobbling masses. <i>Archive of Applied Mechanics</i> , 2011, 81, 887-897.	1.2	45

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19	The influence of biophysical muscle properties on simulating fast human arm movements. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2017, 20, 803-821.	0.9	41
20	Human leg design: optimal axial alignment under constraints. <i>Journal of Mathematical Biology</i> , 2004, 48, 623-646.	0.8	38
21	Impulsive ankle push-off powers leg swing in human walking. <i>Journal of Experimental Biology</i> , 2014, 217, 1831-1831.	0.8	34
22	Spreading out Muscle Mass within a Hill-Type Model: A Computer Simulation Study. <i>Computational and Mathematical Methods in Medicine</i> , 2012, 2012, 1-13.	0.7	32
23	Tailoring anatomical muscle paths: a sheath-like solution for muscle routing in musculoskeletal computer models. <i>Mathematical Biosciences</i> , 2019, 311, 68-81.	0.9	29
24	Hydraulic leg extension is not necessarily the main drive in large spiders. <i>Journal of Experimental Biology</i> , 2012, 215, 578-583.	0.8	27
25	A macroscopic ansatz to deduce the Hill relation. <i>Journal of Theoretical Biology</i> , 2010, 263, 407-418.	0.8	25
26	Phase synchronisation of the three leg joints in quiet human stance. <i>Gait and Posture</i> , 2011, 33, 412-417.	0.6	24
27	Inter-filament spacing mediates calcium binding to troponin: A simple geometric-mechanistic model explains the shift of force-length maxima with muscle activation. <i>Journal of Theoretical Biology</i> , 2018, 454, 240-252.	0.8	24
28	The dynamics of the skeletal muscle: A systems biophysics perspective on muscle modeling with the focus on Hill-type muscle models. <i>GAMM Mitteilungen</i> , 2019, 42, e201900013.	2.7	24
29	Extracting low-velocity concentric and eccentric dynamic muscle properties from isometric contraction experiments. <i>Mathematical Biosciences</i> , 2016, 278, 77-93.	0.9	23
30	Loads distributed in vivo among vertebrae, muscles, spinal ligaments, and intervertebral discs in a passively flexed lumbar spine. <i>Biomechanics and Modeling in Mechanobiology</i> , 2020, 19, 2015-2047.	1.4	23
31	A 3D-geometric model for the deformation of a transversally loaded muscle. <i>Journal of Theoretical Biology</i> , 2012, 298, 116-121.	0.8	22
32	Muscles Reduce Neuronal Information Load: Quantification of Control Effort in Biological vs. Robotic Pointing and Walking. <i>Frontiers in Robotics and AI</i> , 2020, 7, 77.	2.0	20
33	Hill equation and Hatze's muscle activation dynamics complement each other: enhanced pharmacological and physiological interpretability of modelled activity-pCa curves. <i>Journal of Theoretical Biology</i> , 2017, 431, 11-24.	0.8	19
34	Watching quiet human stance to shake off its straitjacket. <i>Archive of Applied Mechanics</i> , 2011, 81, 283-302.	1.2	18
35	Nature as an engineer: one simple concept of a bio-inspired functional artificial muscle. <i>Bioinspiration and Biomimetics</i> , 2012, 7, 036022.	1.5	18
36	Requirements and limits of anatomy-based predictions of locomotion in terrestrial arthropods with emphasis on arachnids. <i>Journal of Paleontology</i> , 2015, 89, 980-990.	0.5	16

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37	How to model a muscle's active force-length relation: A comparative study. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2017, 313, 321-336.	3.4	16
38	The basic mechanical structure of the skeletal muscle machinery: One model for linking microscopic and macroscopic scales. <i>Journal of Theoretical Biology</i> , 2018, 456, 137-167.	0.8	15
39	Exhaustion of Skeletal Muscle Fibers Within Seconds: Incorporating Phosphate Kinetics Into a Hill-Type Model. <i>Frontiers in Physiology</i> , 2020, 11, 306.	1.3	14
40	Can Quick Release Experiments Reveal the Muscle Structure? A Bionic Approach. <i>Journal of Bionic Engineering</i> , 2012, 9, 211-223.	2.7	13
41	Dynamics of quiet human stance: computer simulations of a triple inverted pendulum model. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2016, 19, 819-834.	0.9	13
42	Muscle active force-length curve explained by an electrophysical model of interfilament spacing. <i>Biophysical Journal</i> , 2022, 121, 1823-1855.	0.2	12
43	Climbing in hexapods: A plain model for heavy slopes. <i>Journal of Theoretical Biology</i> , 2012, 293, 82-86.	0.8	11
44	Strain in shock-loaded skeletal muscle and the time scale of muscular wobbling mass dynamics. <i>Scientific Reports</i> , 2017, 7, 13266.	1.6	11
45	The load distribution among three legs on the wall: model predictions for cockroaches. <i>Archive of Applied Mechanics</i> , 2011, 81, 1269-1287.	1.2	10
46	Bioinspired pneumatic muscle spring units mimicking the human motion apparatus: benefits for passive motion range and joint stiffness variation in antagonistic setups. , 2018, , .		9
47	Rules of nature's Formula Run: Muscle mechanics during late stance is the key to explaining maximum running speed. <i>Journal of Theoretical Biology</i> , 2021, 523, 110714.	0.8	9
48	Proof of Concept: Model Based Bionic Muscle with Hyperbolic Force-Velocity Relation. <i>Applied Bionics and Biomechanics</i> , 2012, 9, 267-274.	0.5	8
49	What does head movement tell about the minimum number of mechanical degrees of freedom in quiet human stance?. <i>Archive of Applied Mechanics</i> , 2012, 82, 333-344.	1.2	8
50	Transverse pelvic rotation during quiet human stance. <i>Gait and Posture</i> , 2008, 27, 361-367.	0.6	7
51	Diverging times in movement analysis. <i>Journal of Biomechanics</i> , 2009, 42, 786-788.	0.9	7
52	Theoretical Hill-Type Muscle and Stability: Numerical Model and Application. <i>Computational and Mathematical Methods in Medicine</i> , 2013, 2013, 1-7.	0.7	7
53	An enhanced model of cross-bridge operation with internal elasticity. <i>European Biophysics Journal</i> , 2014, 43, 131-141.	1.2	7
54	A geometry- and muscle-based control architecture for synthesising biological movement. <i>Biological Cybernetics</i> , 2021, 115, 7-37.	0.6	7

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55	JOINT ENERGY BALANCES: THE COMMITMENT TO THE SYNCHRONIZATION OF MEASURING SYSTEMS. Journal of Mechanics in Medicine and Biology, 2005, 05, 139-149.	0.3	5
56	Proof of concept of an artificial muscle: Theoretical model, numerical model, and hardware experiment. , 2011, 2011, 5975336.		3
57	A simple new device to examine human stance: the totter-slab. Biomedizinische Technik, 2010, 55, 27-38.	0.9	2
58	On Laterally Perturbed Human Stance: Experiment, Model, and Control. Applied Bionics and Biomechanics, 2018, 2018, 1-20.	0.5	2
59	Cross-bridge mechanics estimated from skeletal muscles'™ work-loop responses to impacts in legged locomotion. Scientific Reports, 2021, 11, 23638.	1.6	2
60	Robust Behaviour of the Human Leg. , 2006, , 5-16.		1
61	Energieabsorption, Energiespeicherung und Arbeit bei schneller Lokomotion Å¼ber unebenes Terrain. , 2005, , 71-96.		0
62	Giraffes and hominins: reductionist model predictions of compressive loads at the spine base for erect exponents of the animal kingdom. Biology Open, 2021, 10, .	0.6	0
63	Where Have the Dead Gone?. Frontiers in Medicine, 2022, 9, 837287.	1.2	0