Michael GÃ¼nther

List of Publications by Year
in descending order

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	Where Have the Dead Gone?. Frontiers in Medicine, 2022, 9, 837287.	1.2	0
2	Muscle active force-length curve explained by an electrophysical model of interfilament spacing. Biophysical Journal, 2022, 121, 1823-1855.	0.2	12
3	A geometry- and muscle-based control architecture for synthesising biological movement. Biological Cybernetics, 2021, 115, 7-37.	0.6	7
4	Rules of natureâ€™s Formula Run: Muscle mechanics during late stance is the key to explaining maximum running speed. Journal of Theoretical Biology, 2021, 523, 110714.	0.8	9
5	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
6	Cross-bridge mechanics estimated from skeletal musclesâ€™ work-loop responses to impacts in legged locomotion. Scientific Reports, 2021, 11, 23638.	1.6	2
7	Exhaustion of Skeletal Muscle Fibers Within Seconds: Incorporating Phosphate Kinetics Into a Hill-Type Model. Frontiers in Physiology, 2020, 11, 306.	1.3	14
8	Muscles Reduce Neuronal Information Load: Quantification of Control Effort in Biological vs. Robotic Pointing and Walking. Frontiers in Robotics and AI, 2020, 7, 77.	2.0	20
9	Loads distributed in vivo among vertebrae, muscles, spinal ligaments, and intervertebral discs in a passively flexed lumbar spine. Biomechanics and Modeling in Mechanobiology, 2020, 19, 2015-2047.	1.4	23
10	The dynamics of the skeletal muscle: A systems biophysics perspective on muscle modeling with the focus on Hillâ€type muscle models. GAMM Mitteilungen, 2019, 42, e201900013.	2.7	24
11	Tailoring anatomical muscle paths: a sheath-like solution for muscle routing in musculoskeletal computer models. Mathematical Biosciences, 2019, 311, 68-81.	0.9	29
12	Bioinspired pneumatic muscle spring units mimicking the human motion apparatus: benefits for passive motion range and joint stiffness variation in antagonistic setups. , 2018, , .		9
13	On Laterally Perturbed Human Stance: Experiment, Model, and Control. Applied Bionics and Biomechanics, 2018, 2018, 1-20.	0.5	2
14	The basic mechanical structure of the skeletal muscle machinery: One model for linking microscopic and macroscopic scales. Journal of Theoretical Biology, 2018, 456, 137-167.	0.8	15
15	Inter-filament spacing mediates calcium binding to troponin: A simple geometric-mechanistic model explains the shift of force-length maxima with muscle activation. Journal of Theoretical Biology, 2018, 454, 240-252.	0.8	24
16	The influence of biophysical muscle properties on simulating fast human arm movements. Computer Methods in Biomechanics and Biomedical Engineering, 2017, 20, 803-821.	0.9	41
17	Hill equation and Hatzeâ€™s muscle activation dynamics complement each other: enhanced pharmacological and physiological interpretability of modelled activity-pCa curves. Journal of Theoretical Biology, 2017, 431, 11-24.	0.8	19
18	Strain in shock-loaded skeletal muscle and the time scale of muscular wobbling mass dynamics. Scientific Reports, 2017, 7, 13266.	1.6	11

#	Article	IF	Citations
19	How to model a muscleâ€™s active forceâ€“length relation: A comparative study. Computer Methods in Applied Mechanics and Engineering, 2017, 313, 321-336.	3.4	16
20	Extracting low-velocity concentric and eccentric dynamic muscle properties from isometric contraction experiments. Mathematical Biosciences, 2016, 278, 77-93.	0.9	23
21	Dynamics of quiet human stance: computer simulations of a triple inverted pendulum model. Computer Methods in Biomechanics and Biomedical Engineering, 2016, 19, 819-834.	0.9	13
22	Requirements and limits of anatomy-based predictions of locomotion in terrestrial arthropods with emphasis on arachnids. Journal of Paleontology, 2015, 89, 980-990.	0.5	16
23	Comparative Sensitivity Analysis of Muscle Activation Dynamics. Computational and Mathematical Methods in Medicine, 2015, 2015, 1-16.	0.7	46
24	A forward dynamics simulation of human lumbar spine flexion predicting the load sharing of intervertebral discs, ligaments, and muscles. Biomechanics and Modeling in Mechanobiology, 2015, 14, 1081-1105.	1.4	66
25	Impulsive ankle push-off powers leg swing in human walking. Journal of Experimental Biology, 2014, 217, 1218-28.	0.8	68
26	Quantifying control effort of biological and technical movements: An information-entropy-based approach. Physical Review E, 2014, 89, 012716.	0.8	61
27	Impulsive ankle push-off powers leg swing in human walking. Journal of Experimental Biology, 2014, 217, 1831-1831.	0.8	34
28	An enhanced model of cross-bridge operation with internal elasticity. European Biophysics Journal, 2014, 43, 131-141.	1.2	7
29	Hill-type muscle model with serial damping and eccentric forceâ€“velocity relation. Journal of Biomechanics, 2014, 47, 1531-1536.	0.9	136
30	Muscle force depends on the amount of transversal muscle loading. Journal of Biomechanics, 2014, 47, 1822-1828.	0.9	63
31	Theoretical Hill-Type Muscle and Stability: Numerical Model and Application. Computational and Mathematical Methods in Medicine, 2013, 2013, 1-7.	0.7	7
32	Spreading out Muscle Mass within a Hill-Type Model: A Computer Simulation Study. Computational and Mathematical Methods in Medicine, 2012, 2012, 1-13.	0.7	32
33	ELECTRO-MECHANICAL DELAY IN HILL-TYPE MUSCLE MODELS. Journal of Mechanics in Medicine and Biology, 2012, 12, 1250085.	0.3	58
34	Nature as an engineer: one simple concept of a bio-inspired functional artificial muscle. Bioinspiration and Biomimetics, 2012, 7, 036022.	1.5	18
35	Hydraulic leg extension is not necessarily the main drive in large spiders. Journal of Experimental Biology, 2012, 215, 578-583.	0.8	27
36	Proof of Concept: Model Based Bionic Muscle with Hyperbolic Force-Velocity Relation. Applied Bionics and Biomechanics, 2012, 9, 267-274.	0.5	8

#	Article	IF	Citations
37	Can Quick Release Experiments Reveal the Muscle Structure? A Bionic Approach. Journal of Bionic Engineering, 2012, 9, 211-223.	2.7	13
38	A model-experiment comparison of system dynamics for human walking and running. Journal of Theoretical Biology, 2012, 292, 11-17.	0.8	77
39	Climbing in hexapods: A plain model for heavy slopes. Journal of Theoretical Biology, 2012, 293, 82-86.	0.8	11
40	A 3D-geometric model for the deformation of a transversally loaded muscle. Journal of Theoretical Biology, 2012, 298, 116-121.	0.8	22
41	What does head movement tell about the minimum number of mechanical degrees of freedom in quiet human stance?. Archive of Applied Mechanics, 2012, 82, 333-344.	1.2	8
42	Proof of concept of an artificial muscle: Theoretical model, numerical model, and hardware experiment. , 2011, 2011, 5975336.		3
43	Phase synchronisation of the three leg joints in quiet human stance. Gait and Posture, 2011, 33, 412-417.	0.6	24
44	Watching quiet human stance to shake off its straitjacket. Archive of Applied Mechanics, 2011, 81, 283-302.	1.2	18
45	Human leg impact: energy dissipation of wobbling masses. Archive of Applied Mechanics, 2011, 81, 887-897.	1.2	45
46	The load distribution among three legs on the wall: model predictions for cockroaches. Archive of Applied Mechanics, 2011, 81, 1269-1287.	1.2	10
47	A macroscopic ansatz to deduce the Hill relation. Journal of Theoretical Biology, 2010, 263, 407-418.	0.8	25
48	A simple new device to examine human stance: the totter-slab. Biomedizinische Technik, 2010, 55, 27-38.	0.9	2
49	Diverging times in movement analysis. Journal of Biomechanics, 2009, 42, 786-788.	0.9	7
50	All leg joints contribute to quiet human stance: A mechanical analysis. Journal of Biomechanics, 2009, 42, 2739-2746.	0.9	64
51	Transverse pelvic rotation during quiet human stance. Gait and Posture, 2008, 27, 361-367.	0.6	7
52	Running on uneven ground: leg adjustment to vertical steps and self-stability. Journal of Experimental Biology, 2008, 211, 2989-3000.	0.8	107
53	Intelligence by mechanics. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2007, 365, 199-220.	1.6	183
54	High-frequency oscillations as a consequence of neglected serial damping in Hill-type muscle models. Biological Cybernetics, 2007, 97, 63-79.	0.6	84

#	Article	IF	Citations
55	Robust Behaviour of the Human Leg. , 2006, , 5-16.		1
56	Energieabsorption, Energiespeicherung und Arbeit bei schneller Lokomotion Ã¼ber unebenes Terrain. , 2005, , 71-96.		0
57	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
58	Human leg design: optimal axial alignment under constraints. Journal of Mathematical Biology, 2004, 48, 623-646.	0.8	38
59	Synthesis of two-dimensional human walking: a test of the ?-model. Biological Cybernetics, 2003, 89, 89-106.	0.6	111
60	DEALING WITH SKIN MOTION AND WOBBLING MASSES IN INVERSE DYNAMICS. Journal of Mechanics in Medicine and Biology, 2003, 03, 309-335.	0.3	66
61	A movement criterion for running. Journal of Biomechanics, 2002, 35, 649-655.	0.9	410
62	Joint stiffness of the ankle and the knee in running. Journal of Biomechanics, 2002, 35, 1459-1474.	0.9	169
63	Stable operation of an elastic three-segment leg. Biological Cybernetics, 2001, 84, 365-382.	0.6	96