Radu Serban

List of Publications by Year
in descending order

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53	3,371	430754	254106
papers	citations	18 h-index	43 g-index

56	56	56	3491
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Enabling Artificial Intelligence Studies in Off-Road Mobility Through Physics-Based Simulation of Multiagent Scenarios. Journal of Computational and Nonlinear Dynamics, 2022, 17, .	0.7	2
2	Traction control design for off-road mobility using an SPH-DAE cosimulation framework. Multibody System Dynamics, 2022, 55, 165-188.	1.7	7
3	End-to-end learning for off-road terrain navigation using the Chrono open-source simulation platform. Multibody System Dynamics, 2022, 54, 399-414.	1.7	2
4	A Sensor Simulation Framework for Training and Testing Robots and Autonomous Vehicles. ASME Journal of Autonomous Vehicles and Systems, 2021, 1, .	0.6	6
5	A Connected Autonomous Vehicle Emulator (CAVE) for Testing Multi-agent, Conventionalâ€“Autonomous Mixed Vehicle Traffic Scenarios. , 2021, , 339-358.		0
6	Chrono::GPU: An Open-Source Simulation Package for Granular Dynamics Using the Discrete Element Method. Processes, 2021, 9, 1813.	1.3	12
7	Multibody Dynamics Versus Fluid Dynamics: Two Perspectives on the Dynamics of Granular Flows. Journal of Computational and Nonlinear Dynamics, 2020, 15, .	0.7	3
8	SynChrono: A Scalable, Physics-Based Simulation Platform For Testing Groups of Autonomous Vehicles and/or Robots. , 2020, , .		1
9	Sensitivity Analysis for Hybrid Systems and Systems With Memory. Journal of Computational and Nonlinear Dynamics, 2019, 14, .	0.7	8
10	Deformable soil with adaptive level of detail for tracked and wheeled vehicles. International Journal of Vehicle Performance, 2019, 5, 60.	0.2	13
11	An integrated framework for high-performance, high-fidelity simulation of ground vehicle-tyre-terrain interaction. International Journal of Vehicle Performance, 2019, 5, 233.	0.2	8
12	Chrono::Vehicle: template-based ground vehicle modelling and simulation. International Journal of Vehicle Performance, 2019, 5, 18.	0.2	23
13	Using a half-implicit integration scheme for the SPH-based solution of fluidâ€“solid interaction problems. Computer Methods in Applied Mechanics and Engineering, 2019, 345, 100-122.	3.4	25
14	Chrono::Vehicle: template-based ground vehicle modelling and simulation. International Journal of Vehicle Performance, 2019, 5, 18.	0.2	4
15	Posing Multibody Dynamics With Friction and Contact as a Differential Complementarity Problem. Journal of Computational and Nonlinear Dynamics, 2018, 13, .	0.7	20
16	On Simulating Sloshing in Vehicle Dynamics. , 2018, , .		1
17	Synchrono: An open-source framework for physics-based simulation of collaborating robots. , 2018, , .		1
18	Analysis of a Splitting Approach for the Parallel Solution of Linear Systems on GPU Cards. SIAM Journal of Scientific Computing, 2017, 39, C215-C237.	1.3	5

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19	A high-fidelity approach for vehicle mobility simulation: Nonlinear finite element tires operating on granular material. Journal of Terramechanics, 2017, 72, 39-54.	1.4	78
20	Compliant contact versus rigid contact: A comparison in the context of granular dynamics. Physical Review E, 2017, 96, 042905.	0.8	32
21	A Partitioned Lagrangian-Lagrangian Approach for Fluid-Solid Interaction Problems. , 2017, , .		2
22	An Overview of a Connected Autonomous Vehicle Emulator (CAVE). , 2017, , .		1
23	On the Importance of Displacement History in Soft-Body Contact Models. Journal of Computational and Nonlinear Dynamics, 2016, 11, .	0.7	24
24	Chrono: An Open Source Multi-physics Dynamics Engine. Lecture Notes in Computer Science, 2016, , 19-49.	1.0	105
25	A GPUâ€based preconditioned Newtonâ€Krylov solver for flexible multibody dynamics. International Journal for Numerical Methods in Engineering, 2015, 102, 1585-1604.	1.5	17
26	Parallel Computing in Multibody System Dynamics: Why, When, and How. Journal of Computational and Nonlinear Dynamics, 2014, 9, .	0.7	41
27	A High Performance Computing Approach to the Simulation of Fluid-Solid interaction Problems with Rigid and Flexible Components. Archive of Mechanical Engineering, 2014, 61, 227-251.	0.7	13
28	A Lagrangianâ€“Lagrangian Framework for the Simulation of Rigid and Deformable Bodies in Fluid. Computational Methods in Applied Sciences (Springer), 2014, , 33-52.	0.1	4
29	A parallel computational model for sensitivity analysis in optimization for robustness. Optimization Methods and Software, 2009, 24, 105-121.	1.6	3
30	A model of macroscale deformation and microvibration in skeletal muscle tissue. ESAIM: Mathematical Modelling and Numerical Analysis, 2009, 43, 805-823.	0.8	6
31	Implicit Integration in Molecular Dynamics Simulation. , 2008, , .		8
32	An Investigation on New Numerical Methods for Molecular Dynamics Simulation. , 2007, , 1467.		0
33	The Effect of Problem Perturbations on Nonlinear Dynamical Systems and their Reduced-Order Models. SIAM Journal of Scientific Computing, 2007, 29, 2621-2643.	1.3	8
34	Error Estimation for Reducedâ€Order Models of Dynamical Systems. SIAM Review, 2007, 49, 277-299.	4.2	50
35	Sensitivity analysis of differential-algebraic equations and partial differential equations. Computers and Chemical Engineering, 2006, 30, 1553-1559.	2.0	84
36	Error Estimation for Reduced-Order Models of Dynamical Systems. SIAM Journal on Numerical Analysis, 2005, 43, 1693-1714.	1.1	49

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37	SUNDIALS. ACM Transactions on Mathematical Software, 2005, 31, 363-396.	1.6	2,134
38	Adaptive algorithms for optimal control of time-dependent partial differential-algebraic equation systems. International Journal for Numerical Methods in Engineering, 2003, 57, 1457-1469.	1.5	20
39	Adjoint Sensitivity Analysis for Differential-Algebraic Equations: The Adjoint DAE System and Its Numerical Solution. SIAM Journal of Scientific Computing, 2003, 24, 1076-1089.	1.3	284
40	Efficient Computation of Sensitivities for Ordinary Differential Equation Boundary Value Problems. SIAM Journal on Numerical Analysis, 2002, 40, 220-232.	1.1	6
41	Halo orbit mission correction maneuvers using optimal control. Automatica, 2002, 38, 571-583.	3.0	55
42	COOPT â€" a software package for optimal control of large-scale differentialâ€"algebraic equation systems. Mathematics and Computers in Simulation, 2001, 56, 187-203.	2.4	17
43	Identification and Identifiability of Unknown Parameters in Multibody Dynamic Systems. Multibody System Dynamics, 2001, 5, 335-350.	1.7	57
44	Globally Independent Coordinates for Real-Time Vehicle Simulation. Journal of Mechanical Design, Transactions of the ASME, 2000, 122, 575-582.	1.7	12
45	Optimal Control for Halo Orbit Missions. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2000, 33, 1-6.	0.4	3
46	Computational Algorithm for Dynamic Optimization of Chemical Vapor Deposition Processes in Stagnation Flow Reactors. Journal of the Electrochemical Society, 2000, 147, 2718.	1.3	26
47	Numerical Methods for High-Speed Vehicle Dynamic Simulation. Mechanics Based Design of Structures and Machines, 1999, 27, 507-533.	0.6	9
48	Kinematic and Kinetic Derivatives in Multibody System Analysisâˆ—. Mechanics Based Design of Structures and Machines, 1998, 26, 145-173.	0.6	39
49	A Topology-Based Approach to Exploiting Sparsity in Multibody Dynamics: Joint Formulation*. Mechanics Based Design of Structures and Machines, 1997, 25, 221-241.	0.6	14
50	A Topology-Based Approach for Exploiting Sparsity in Multibody Dynamics in Cartesian Formulation*. Mechanics Based Design of Structures and Machines, 1997, 25, 379-396.	0.6	21
51	Variable Fidelity Differential-Algebraic Equation Model Correlation. Mechanics Based Design of Structures and Machines, 1997, 25, 61-85.	0.6	1
52	Autonomous Vehicles in the Cyberspace: Accelerating Testing via Computer Simulation. , 0, , .		4
53	A Geographically Distributed Simulation Framework for the Analysis of Mixed Traffic Scenarios Involving Conventional and Autonomous Vehicles. , 0, , .		0