Martin Arnold

List of Publications by Year
in descending order

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69 papers	1,743 citations	448610 19 h-index	340414 39 g-index
76 all docs	76 docs citations	76 times ranked	1109 citing authors

#	Article	IF	Citations
1	A Lie group variational integration approach to the full discretization of a constrained geometrically exact Cosserat beam model. Multibody System Dynamics, 2022, 54, 97-123.	1.7	5
2	BDF integrators for constrained mechanical systems on Lie groups. Journal of Computational and Applied Mathematics, 2021, 387, 112517.	1.1	11
3	RATTLie: A variational Lie group integration scheme for constrained mechanical systems. Journal of Computational and Applied Mathematics, 2021, 387, 112492.	1.1	5
4	The SNiMoWrapper: An FMI-Compatible Testbed for Numerical Algorithms in Co-simulation. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2019, , 99-116.	0.1	0
5	Staggered grid discretizations on Lie groups with applications in beam and shell theory. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800277.	0.2	0
6	Periodic solutions of measure differential inclusions. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800066.	0.2	0
7	A new approach for force-displacement co-simulation using kinematic coupling constraints. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2017, 97, 1147-1166.	0.9	9
8	Implementation Details of a Generalized-Î± Differential-Algebraic Equation Lie Group Method. Journal of Computational and Nonlinear Dynamics, 2017, 12, .	0.7	10
9	DAE Aspects of Multibody System Dynamics. Differential-algebraic Equations Forum, 2017, , 41-106.	0.6	8
10	A novel approach to Lie group structured configuration spaces of rigid bodies. Proceedings in Applied Mathematics and Mechanics, 2017, 17, 151-152.	0.2	3
11	A Lie Algebra Approach to Lie Group Time Integration of Constrained Systems. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2016, , 91-158.	0.3	13
12	Convergence of generalized- Î± $oldsymbol{alpha}$ time integration for nonlinear systems with stiff potential forces. Multibody System Dynamics, 2016, 37, 107-125.	1.7	11
13	Application of Generalized Mie Theory to EELS Calculations as a Tool for Optimization of Plasmonic Structures. Plasmonics, 2016, 11, 865-874.	1.8	7
14	Numerical solution of the relativistic single-site scattering problem for the Coulomb and the Mathieu potential. Journal of Physics Condensed Matter, 2015, 27, 435202.	0.7	40
15	Order reduction in time integration caused by velocity projection. Journal of Mechanical Science and Technology, 2015, 29, 2579-2585.	0.7	4
16	Error analysis of generalized- $$alpha $$ Î± Lie group time integration methods for constrained mechanical systems. Numerische Mathematik, 2015, 129, 149-179.	0.9	30
17	Integration of Nonlinear Models of Flexible Body Deformation in Multibody System Dynamics. Journal of Computational and Nonlinear Dynamics, 2014, 9, .	0.7	6
18	Semi-analytical methods for singularly perturbed multibody system models. Journal of Computational and Applied Mathematics, 2014, 262, 322-332.	1.1	1

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19	Numerical solution of penalty formulations for constrained mechanical systems using heterogeneous multiscale methods. Journal of Computational and Applied Mathematics, 2014, 262, 193-204.	1.1	1
20	Error analysis for co-simulation with force-displacement coupling. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 43-44.	0.2	8
21	Coupled differential algebraic equations in the simulation of flexible multibody systems with hydrodynamic force elements. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 523-524.	0.2	0
22	Error Analysis and Error Estimates for Co-simulation in FMI for Model Exchange and Co-Simulation v2.0. Differential-algebraic Equations Forum, 2014, , 107-125.	0.6	18
23	Modular Time Integration of Block-Structured Coupled Systems Without Algebraic Loops. Differential-algebraic Equations Forum, 2014, , 97-106.	0.6	2
24	Error Analysis and Error Estimates for Co-Simulation in FMI for Model Exchange and Co-Simulation V2.0. Archive of Mechanical Engineering, 2013, 60, 75-94.	0.7	44
25	Simulation Algorithms and Software Tools. , 2013, , 45-68.		2
26	A recursive multibody formalism for systems with small mass and inertia terms. Mechanical Sciences, 2013, 4, 221-231.	0.5	3
27	Implementation of multirate time integration methods for air pollution modelling. Geoscientific Model Development, 2012, 5, 1395-1405.	1.3	13
28	Numerical aspects in the dynamic simulation of geometrically exact rods. Applied Numerical Mathematics, 2012, 62, 1411-1427.	1.2	30
29	Stabilized overlapping modular time integration of coupled differential-algebraic equations. Applied Numerical Mathematics, 2012, 62, 1491-1502.	1.2	15
30	Convergence of continuous approximations for discontinuous ODEs. Applied Numerical Mathematics, 2012, 62, 1503-1514.	1.2	6
31	Numerical solution of multiscale problems in atmospheric modeling. Applied Numerical Mathematics, 2012, 62, 1531-1543.	1.2	14
32	Quasistatic approximations for stiff second order differential equations. Applied Numerical Mathematics, 2012, 62, 1579-1590.	1.2	6
33	Lie group generalized-Î± time integration of constrained flexible multibody systems. Mechanism and Machine Theory, 2012, 48, 121-137.	2.7	124
34	Co-simulation with communication step size control in an FMI compatible master algorithm. , 2012, , .		44
35	Numerical methods in vehicle system dynamics: state of the art and current developments. Vehicle System Dynamics, 2011, 49, 1159-1207.	2.2	77
36	Multi-body dynamics simulation of geometrically exact Cosserat rods. Multibody System Dynamics, 2011, 25, 285-312.	1.7	146

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37	Smooth velocity approximation for constrained systems in real-time simulation. Multibody System Dynamics, 2011, 26, 1-14.	1.7	11
38	Two Lie Group Formulations for Dynamic Multibody Systems With Large Rotations. , 2011, , .		17
39	Stability of Sequential Modular Time Integration Methods for Coupled Multibody System Models. Journal of Computational and Nonlinear Dynamics, 2010, 5, .	0.7	49
40	Model reduction via quasistatic approximations. Proceedings in Applied Mathematics and Mechanics, 2010, 10, 655-656.	0.2	1
41	Multirate Rungeâ€“Kutta schemes for advection equations. Journal of Computational and Applied Mathematics, 2009, 226, 345-357.	1.1	42
42	Towards Improved Error Estimates for Higher Order Time Integration of ODEs with Non-Smooth Right Hand Side. , 2009, , 227-237.		0
43	Sensitivity Analysis of Discontinuous Multidisciplinary Models: Two Examples. , 2009, , 239-251.		0
44	On plastic incompressibility within time-adaptive finite elements combined with projection techniques. Computer Methods in Applied Mechanics and Engineering, 2008, 198, 178-193.	3.4	33
45	The Generalized-Î± Scheme as a Linear Multistep Integrator: Toward a General Mechatronic Simulator. Journal of Computational and Nonlinear Dynamics, 2008, 3, .	0.7	26
46	Numerical methods for simulation in applied dynamics. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2008, , 191-246.	0.3	14
47	The Generalized-Î± Scheme as a Linear Multistep Integrator: Towards a General Mechatronic Simulator. , 2007, , 61.		2
48	Linearly implicit time integration methods in real-time applications: DAEs and stiff ODEs. Multibody System Dynamics, 2007, 17, 99-117.	1.7	45
49	Convergence of the generalized-Î± scheme for constrained mechanical systems. Multibody System Dynamics, 2007, 18, 185-202.	1.7	301
50	From Multibody Dynamics to Multidisciplinary Applications. , 2007, , 273-294.		3
51	Multi-Rate Time Integration for Large Scale Multibody System Models. , 2007, , 1-10.		32
52	Efficient corrector iteration for DAE time integration in multibody dynamics. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 6958-6973.	3.4	15
53	Numerical analysis of structure preserving NystrÃ¶m methods for Hamiltonian systems. Applied Numerical Mathematics, 2005, 53, 391-408.	1.2	2
54	A Modal Multifield Approach for an Extended Flexible Body Description in Multibody Dynamics. Multibody System Dynamics, 2005, 13, 299-322.	1.7	18

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55	Implicit-Explicit Time Integration in Multibody Dynamics. , 2005, , .		2
56	Numerical Methods in the Simulation of Vehicle-Guideway Interaction. , 2004, , 115-120.		2
57	Energy conservation in modified NystrÃ¶m methods for separable Hamiltoniansystems. Proceedings in Applied Mathematics and Mechanics, 2003, 3, 557-558.	0.2	1
58	Preconditioned Dynamic Iteration for Coupled Differential-Algebraic Systems. BIT Numerical Mathematics, 2001, 41, 1-25.	1.0	94
59	Software Tools: From Multibody System Analysis to Vehicle System Dynamics. , 2001, , 225-238.		9
60	Pantograph and catenary dynamics: A benchmark problem and its numerical solution. Applied Numerical Mathematics, 2000, 34, 345-362.	1.2	128
61	Coupling DAEs and PDEs for Simulating the Interaction of Pantograph and Catenary. Mathematical and Computer Modelling of Dynamical Systems, 2000, 6, 129-144.	1.4	32
62	Non-stiff integrators for differentialâ€“algebraic systems of index 2. Numerical Algorithms, 1998, 19, 25-41.	1.1	10
63	Solving problems with unilateral constraints by DAE methods. Mathematics and Computers in Simulation, 1998, 47, 47-67.	2.4	12
64	Half-explicit Runge-Kutta methods with explicit stages for differential-algebraic systems of index 2. BIT Numerical Mathematics, 1998, 38, 415-438.	1.0	26
65	Apporoximation of contact geometry in the dynamical simulation of wheel-rail. Mathematical and Computer Modelling of Dynamical Systems, 1998, 4, 162-184.	1.4	17
66	A perturbation analysis for the dynamical simulation of mechanical multibody systems. Applied Numerical Mathematics, 1995, 18, 37-56.	1.2	21
67	Stability of numerical methods for differential-algebraic equations of higher index. Applied Numerical Mathematics, 1993, 13, 5-14.	1.2	7
68	Half-explicit Runge-Kutta methods for semi-explicit differential-algebraic equations of index 1. Numerische Mathematik, 1993, 64, 409-431.	0.9	17
69	Partitioning strategies in Runge-Kutta type methods. IMA Journal of Numerical Analysis, 1993, 13, 303-319.	1.5	26