David GonzÃ¡lez IbÃ¡Ã±ez

List of Publications by Year
in descending order

67 papers	1,929 citations	257450 24 h-index	265206 42 g-index
70 all docs	70 docs citations	70 times ranked	1066 citing authors

#	Article	IF	Citations
1	PGD-Based Computational Vademecum for Efficient Design, Optimization and Control. Archives of Computational Methods in Engineering, 2013, 20, 31-59.	10.2	246
2	A Manifold Learning Approach to Data-Driven Computational Elasticity and Inelasticity. Archives of Computational Methods in Engineering, 2018, 25, 47-57.	10.2	153
3	Numerically explicit potentials for the homogenization of nonlinear elastic heterogeneous materials. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 2723-2737.	6.6	98
4	Recent advances on the use of separated representations. International Journal for Numerical Methods in Engineering, 2010, 81, 637-659.	2.8	97
5	Real‐time simulation of biological soft tissues: a PGD approach. International Journal for Numerical Methods in Biomedical Engineering, 2013, 29, 586-600.	2.1	72
6	Thermodynamically consistent data-driven computational mechanics. Continuum Mechanics and Thermodynamics, 2019, 31, 239-253.	2.2	65
7	Real‐time simulation of surgery by reduced‐order modeling and X‐FEM techniques. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 574-588.	2.1	63
8	Proper Generalized Decomposition based dynamic data driven inverse identification. Mathematics and Computers in Simulation, 2012, 82, 1677-1695.	4.4	57
9	Hybrid constitutive modeling: data-driven learning of corrections to plasticity models. International Journal of Material Forming, 2019, 12, 717-725.	2.0	56
10	Non incremental strategies based on separated representations: applications in computational rheology. Communications in Mathematical Sciences, 2010, 8, 671-695.	1.0	56
11	Learning Corrections for Hyperelastic Models From Data. Frontiers in Materials, 2019, 6, .	2.4	50
12	Numerical integration in Natural Neighbour Galerkin methods. International Journal for Numerical Methods in Engineering, 2004, 60, 2077-2104.	2.8	49
13	A Multidimensional Data-Driven Sparse Identification Technique: The Sparse Proper Generalized Decomposition. Complexity, 2018, 2018, 1-11.	1.6	49
14	A Manifold Learning Approach for Integrated Computational Materials Engineering. Archives of Computational Methods in Engineering, 2018, 25, 59-68.	10.2	47
15	A natural element updated Lagrangian strategy for free-surface fluid dynamics. Journal of Computational Physics, 2007, 223, 127-150.	3.8	46
16	Deep learning of thermodynamics-aware reduced-order models from data. Computer Methods in Applied Mechanics and Engineering, 2021, 379, 113763.	6.6	46
17	Real‐time direct integration of reduced solid dynamics equations. International Journal for Numerical Methods in Engineering, 2014, 99, 633-653.	2.8	40
18	Model order reduction in hyperelasticity: a proper generalized decomposition approach. International Journal for Numerical Methods in Engineering, 2013, 96, 129-149.	2.8	37

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19	Volumetric locking in natural neighbour Galerkin methods. International Journal for Numerical Methods in Engineering, 2004, 61, 611-632.	2.8	36
20	FE2 multiscale in linear elasticity based on parametrized microscale models using proper generalized decomposition. Computer Methods in Applied Mechanics and Engineering, 2013, 257, 183-202.	6.6	36
21	kPCA-Based Parametric Solutions Within the PGD Framework. Archives of Computational Methods in Engineering, 2018, 25, 69-86.	10.2	34
22	A higher order method based on local maximum entropy approximation. International Journal for Numerical Methods in Engineering, 2010, 83, 741-764.	2.8	31
23	Computational Patient Avatars for Surgery Planning. Annals of Biomedical Engineering, 2016, 44, 35-45.	2.5	30
24	Reduced-order modeling of soft robots. PLoS ONE, 2018, 13, e0192052.	2.5	30
25	Structure-preserving neural networks. Journal of Computational Physics, 2021, 426, 109950.	3.8	25
26	Computational vademecums for the real-time simulation of haptic collision between nonlinear solids. Computer Methods in Applied Mechanics and Engineering, 2015, 283, 210-223.	6.6	24
27	Model order reduction for real-time data assimilation through Extended Kalman Filters. Computer Methods in Applied Mechanics and Engineering, 2017, 326, 679-693.	6.6	24
28	Computational vademecums for realâ€time simulation of surgical cutting in haptic environments. International Journal for Numerical Methods in Engineering, 2016, 108, 1230-1247.	2.8	23
29	A comparative study on the performance of meshless approximations and their integration. Computational Mechanics, 2011, 48, 121-137.	4.0	22
30	Higherâ€order natural element methods: Towards an isogeometric meshless method. International Journal for Numerical Methods in Engineering, 2008, 74, 1928-1954.	2.8	20
31	Proper Generalized Decompositions. SpringerBriefs in Applied Sciences and Technology, 2016, , .	0.4	20
32	An error estimator for real-time simulators based on model order reduction. Advanced Modeling and Simulation in Engineering Sciences, 2015, 2, .	1.7	17
33	Local proper generalized decomposition. International Journal for Numerical Methods in Engineering, 2017, 112, 1715-1732.	2.8	16
34	Physically sound, self-learning digital twins for sloshing fluids. PLoS ONE, 2020, 15, e0234569.	2.5	16
35	Reduced order modeling for physically-based augmented reality. Computer Methods in Applied Mechanics and Engineering, 2018, 341, 53-70.	6.6	14
36	<i>Vademecum</i>â€based GFEM (Vâ€GFEM): optimal enrichment for transient problems. International Journal for Numerical Methods in Engineering, 2016, 108, 971-989.	2.8	12

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37	A PGD-based multiscale formulation for non-linear solid mechanics under small deformations. Computer Methods in Applied Mechanics and Engineering, 2016, 305, 806-826.	6.6	12
38	Learning non-Markovian physics from data. Journal of Computational Physics, 2021, 428, 109982.	3.8	12
39	Streamline upwind/Petrovâ€"Galerkinâ€"based stabilization of proper generalized decompositions for highâ€"dimensional advectionâ€"diffusion equations. International Journal for Numerical Methods in Engineering, 2013, 94, 1216-1232.	2.8	11
40	An augmented reality platform for interactive aerodynamic design and analysis. International Journal for Numerical Methods in Engineering, 2019, 120, 125-138.	2.8	11
41	Data-Driven GENERIC Modeling of Poroviscoelastic Materials. Entropy, 2019, 21, 1165.	2.2	11
42	Multiparametric response surface construction by means of proper generalized decomposition: An extension of the PARAFAC procedure. Computer Methods in Applied Mechanics and Engineering, 2013, 253, 543-557.	6.6	10
43	Towards a pancreatic surgery simulator based on model order reduction. Advanced Modeling and Simulation in Engineering Sciences, 2015, 2, .	1.7	10
44	A Data-Driven Learning Method for Constitutive Modeling: Application to Vascular Hyperelastic Soft Tissues. Materials, 2020, 13, 2319.	2.9	10
45	Effect of the separated approximation of input data in the accuracy of the resulting PGD solution. Advanced Modeling and Simulation in Engineering Sciences, 2015, 2, .	1.7	9
46	Recent advances in the meshless simulation of aluminium extrusion and other related forming processes. Archives of Computational Methods in Engineering, 2006, 13, 3-43.	10.2	8
47	Real-time in silico experiments on gene regulatory networks and surgery simulation on handheld devices. Journal of Computational Surgery, 2014, 1, 1.	0.6	8
48	Real-time simulation techniques for augmented learning in science and engineering. Visual Computer, 2016, 32, 1465-1479.	3.5	8
49	Realâ€"time interaction of virtual and physical objects in mixed reality applications. International Journal for Numerical Methods in Engineering, 2020, 121, 3849-3868.	2.8	8
50	Use of Î± -shapes for the measurement of 3D bubbles in fluidized beds from two-fluid model simulations. Powder Technology, 2016, 288, 409-421.	4.2	7
51	Improved boundary tracking in meshless simulations of free-surface flows. Computational Mechanics, 2008, 42, 467-479.	4.0	6
52	Learning data-driven reduced elastic and inelastic models of spot-welded patches. Mechanics and Industry, 2021, 22, 32.	1.3	5
53	Predicting muscle fatigue: a response surface approximation based on proper generalized decomposition technique. Biomechanics and Modeling in Mechanobiology, 2017, 16, 625-634.	2.8	4
54	Oxidative stress prediction: A preliminary approach using a response surface based technique. Toxicology in Vitro, 2018, 46, 273-283.	2.4	4

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55	SUPG-based stabilization using a separated representations approach. International Journal of Material Forming, 2010, 3, 883-886.	2.0	3
56	In-plane/out-of-plane separated representations of updated Lagrangian descriptions of viscoplastic flow models in plate domains. Comptes Rendus - Mecanique, 2016, 344, 225-235.	2.1	3
57	A high order method using MAX-ENT approximation schemes. International Journal of Material Forming, 2009, 2, 577-580.	2.0	2
58	PGD-Based Model Reduction for Surgery Simulation: Solid Dynamics and Contact Detection. Lecture Notes in Computer Science, 2014, , 193-202.	1.3	2
59	A natural element updated Lagrangian approach for modelling fluid structure interactions. European Journal of Computational Mechanics, 2007, 16, 323-336.	0.6	1
60	A natural neighbour Lagrangeâ€"Galerkin method for the simulation of Newtonian and Oldroydâ€B free surface flows. International Journal for Numerical Methods in Fluids, 2012, 70, 860-885.	1.6	1
61	A manifold learning approach to data-driven computational materials and processes. AIP Conference Proceedings, 2017, , .	0.4	1
62	Natural Element simulation of free-surface, newtonian and non-newtonian flows. , 2011, , .		0
63	Real Time Simulation of Non-Linear Solids by PGD Techniques. Key Engineering Materials, 2012, 504-506, 467-472.	0.4	0
64	Real-Time Simulation for Virtual Surgery in a PGD Framework. , 2012, , .		0
65	Improving the realism of mixed reality through physical simulation. , 2018, , .		0
66	Scientific Machine Learning for Coarse-Grained Constitutive Models. Procedia Manufacturing, 2020, 47, 693-695.	1.9	0
67	Towards an Isogeometric Meshless Natural Element Method. , 2009, , 237-257.		0