

Francisco Chinesta

List of Publications by Year in descending order

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128
papers

3,363
citations

186265

28
h-index

168389

53
g-index

133
all docs

133
docs citations

133
times ranked

1539
citing authors

#	ARTICLE	IF	CITATIONS
1	A Short Review on Model Order Reduction Based on Proper Generalized Decomposition. Archives of Computational Methods in Engineering, 2011, 18, 395-404.	10.2	460
2	Recent Advances and New Challenges in the Use of the Proper Generalized Decomposition for Solving Multidimensional Models. Archives of Computational Methods in Engineering, 2010, 17, 327-350.	10.2	301
3	The Proper Generalized Decomposition for Advanced Numerical Simulations. SpringerBriefs in Applied Sciences and Technology, 2014, , .	0.4	175
4	A Manifold Learning Approach to Data-Driven Computational Elasticity and Inelasticity. Archives of Computational Methods in Engineering, 2018, 25, 47-57.	10.2	153
5	Data-driven modeling and learning in science and engineering. Comptes Rendus - Mecanique, 2019, 347, 845-855.	2.1	150
6	Virtual, Digital and Hybrid Twins: A New Paradigm in Data-Based Engineering and Engineered Data. Archives of Computational Methods in Engineering, 2020, 27, 105-134.	10.2	142
7	Data-driven non-linear elasticity: constitutive manifold construction and problem discretization. Computational Mechanics, 2017, 60, 813-826.	4.0	101
8	Recent advances on the use of separated representations. International Journal for Numerical Methods in Engineering, 2010, 81, 637-659.	2.8	97
9	Parametric solutions involving geometry: A step towards efficient shape optimization. Computer Methods in Applied Mechanics and Engineering, 2014, 268, 178-193.	6.6	69
10	Thermodynamically consistent data-driven computational mechanics. Continuum Mechanics and Thermodynamics, 2019, 31, 239-253.	2.2	65
11	Hybrid constitutive modeling: data-driven learning of corrections to plasticity models. International Journal of Material Forming, 2019, 12, 717-725.	2.0	56
12	Model order reduction for hyperelastic materials. International Journal for Numerical Methods in Engineering, 2010, 81, 1180-1206.	2.8	55
13	Proper generalized decomposition of timeâ€multiscale models. International Journal for Numerical Methods in Engineering, 2012, 90, 569-596.	2.8	52
14	3D Modeling of squeeze flows occurring in composite laminates. International Journal of Material Forming, 2015, 8, 73-83.	2.0	49
15	A Multidimensional Data-Driven Sparse Identification Technique: The Sparse Proper Generalized Decomposition. Complexity, 2018, 2018, 1-11.	1.6	49
16	Recirculating Flows Involving Short Fiber Suspensions: Numerical Difficulties and Efficient Advanced Micro-Macro Solvers. Archives of Computational Methods in Engineering, 2009, 16, 1-30.	10.2	48
17	Realâ€time monitoring of thermal processes by reducedâ€order modeling. International Journal for Numerical Methods in Engineering, 2015, 102, 991-1017.	2.8	48
18	Separated representations of 3D elastic solutions in shell geometries. Advanced Modeling and Simulation in Engineering Sciences, 2014, 1, .	1.7	42

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19	From ROM of Electrochemistry to AI-Based Battery Digital and Hybrid Twin. Archives of Computational Methods in Engineering, 2021, 28, 979-1015.	10.2	41
20	Real-time direct integration of reduced solid dynamics equations. International Journal for Numerical Methods in Engineering, 2014, 99, 633-653.	2.8	40
21	Model order reduction in hyperelasticity: a proper generalized decomposition approach. International Journal for Numerical Methods in Engineering, 2013, 96, 129-149.	2.8	37
22	Non-intrusive Sparse Subspace Learning for Parametrized Problems. Archives of Computational Methods in Engineering, 2019, 26, 303-326.	10.2	35
23	Real time simulation for computational surgery: a review. Advanced Modeling and Simulation in Engineering Sciences, 2014, 1, 11.	1.7	33
24	Reduction of the chemical master equation for gene regulatory networks using proper generalized decompositions. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 960-973.	2.1	32
25	PGD-Based Modeling of Materials, Structures and Processes. ESAFORM Bookseries on Material Forming, 2014, , .	0.1	31
26	The Proper Generalized Decomposition (PGD) as a numerical procedure to solve 3D cracked plates in linear elastic fracture mechanics. International Journal of Solids and Structures, 2013, 50, 1710-1720.	2.7	30
27	Towards a framework for non-linear thermal models in shell domains. International Journal of Numerical Methods for Heat and Fluid Flow, 2013, 23, 55-73.	2.8	30
28	Computational Patient Avatars for Surgery Planning. Annals of Biomedical Engineering, 2016, 44, 35-45.	2.5	30
29	Reduced-order modeling of soft robots. PLoS ONE, 2018, 13, e0192052.	2.5	30
30	On the use of proper generalized decompositions for solving the multidimensional chemical master equation. European Journal of Computational Mechanics, 2010, 19, 53-64.	0.6	29
31	Digital twins that learn and correct themselves. International Journal for Numerical Methods in Engineering, 2022, 123, 3034-3044.	2.8	25
32	Structure-preserving neural networks. Journal of Computational Physics, 2021, 426, 109950.	3.8	25
33	An efficient reduced simulation of residual stresses in composite forming processes. International Journal of Material Forming, 2010, 3, 1339-1350.	2.0	24
34	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
35	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
36	Computational vademecums for real-time simulation of surgical cutting in haptic environments. International Journal for Numerical Methods in Engineering, 2016, 108, 1230-1247.	2.8	23

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37	Data-Driven Computational Plasticity. <i>Procedia Engineering</i> , 2017, 207, 209-214.	1.2	23
38	From Single-Scale to Two-Scales Kinetic Theory Descriptions of Rods Suspensions. <i>Archives of Computational Methods in Engineering</i> , 2013, 20, 1-29.	10.2	21
39	Kinetic Theory Microstructure Modeling in Concentrated Suspensions. <i>Entropy</i> , 2013, 15, 2805-2832.	2.2	20
40	Parametric solution of the Rayleigh-Benard convection model by using the PGD. <i>International Journal of Numerical Methods for Heat and Fluid Flow</i> , 2015, 25, 1252-1281.	2.8	19
41	Improving Computational Efficiency in LCM by Using Computational Geometry and Model Reduction Techniques. <i>Key Engineering Materials</i> , 0, 611-612, 339-343.	0.4	17
42	An error estimator for real-time simulators based on model order reduction. <i>Advanced Modeling and Simulation in Engineering Sciences</i> , 2015, 2, .	1.7	17
43	Efficient PGD-based dynamic calculation of non-linear soil behavior. <i>Comptes Rendus - Mecanique</i> , 2016, 344, 24-41.	2.1	17
44	Modeling soft, permeable matter with the proper generalized decomposition (PGD) approach, and verification by means of nanoindentation. <i>Soft Matter</i> , 2017, 13, 4482-4493.	2.7	17
45	On the space separated representation when addressing the solution of PDE in complex domains. <i>Discrete and Continuous Dynamical Systems - Series S</i> , 2016, 9, 475-500.	1.1	17
46	On the use of model order reduction for simulating automated fibre placement processes. <i>Advanced Modeling and Simulation in Engineering Sciences</i> , 2016, 3, .	1.7	16
47	Local proper generalized decomposition. <i>International Journal for Numerical Methods in Engineering</i> , 2017, 112, 1715-1732.	2.8	16
48	Proper Generalised Decomposition for heat and moisture multizone modelling. <i>Energy and Buildings</i> , 2015, 105, 334-351.	6.7	15
49	Microstructural analysis of pre-impreganted tapes consolidation. <i>International Journal of Material Forming</i> , 2017, 10, 369-378.	2.0	15
50	Application of Machine Learning Tools for the Improvement of Reactive Extrusion Simulation. <i>Macromolecular Materials and Engineering</i> , 2020, 305, 2000375.	3.6	15
51	On the Data-Driven Modeling of Reactive Extrusion. <i>Fluids</i> , 2020, 5, 94.	1.7	15
52	Parametric 3D elastic solutions of beams involved in frame structures. <i>Advances in Aircraft and Spacecraft Science</i> , 2015, 2, 233-248.	0.5	15
53	Reduced order modeling for physically-based augmented reality. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2018, 341, 53-70.	6.6	14
54	Surrogate parametric metamodel based on Optimal Transport. <i>Mathematics and Computers in Simulation</i> , 2022, 194, 36-63.	4.4	14

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55	On the space-time separated representation of integral linear viscoelastic models. <i>Comptes Rendus - Mecanique</i> , 2015, 343, 247-263.	2.1	13
56	Learning stable reduced-order models for hybrid twins. <i>Data-Centric Engineering</i> , 2021, 2, .	2.3	13
57	Coupling finite elements and reduced approximation bases. <i>European Journal of Computational Mechanics</i> , 2009, 18, 445-463.	0.6	12
58	Learning non-Markovian physics from data. <i>Journal of Computational Physics</i> , 2021, 428, 109982.	3.8	12
59	Nonlinear Regression Operating on Microstructures Described from Topological Data Analysis for the Real-Time Prediction of Effective Properties. <i>Materials</i> , 2020, 13, 2335.	2.9	12
60	Efficient mold cooling optimization by using model reduction. <i>International Journal of Material Forming</i> , 2011, 4, 73-82.	2.0	11
61	Streamline upwind/Petrovâ€“Galerkinâ€“based stabilization of proper generalized decompositions for highâ€“dimensional advectionâ€“diffusion equations. <i>International Journal for Numerical Methods in Engineering</i> , 2013, 94, 1216-1232.	2.8	11
62	Review of Reduced Order Models for Heat and Moisture Transfer in Building Physics with Emphasis in PGD Approaches. <i>Archives of Computational Methods in Engineering</i> , 2017, 24, 655-667.	10.2	11
63	Advanced parametric space-frequency separated representations in structural dynamics: A harmonicâ€“modal hybrid approach. <i>Comptes Rendus - Mecanique</i> , 2018, 346, 590-602.	2.1	11
64	Data-Driven Modeling for Multiphysics Parametrized Problems-Application to Induction Hardening Process. <i>Metals</i> , 2021, 11, 738.	2.3	11
65	Towards a pancreatic surgery simulator based on model order reduction. <i>Advanced Modeling and Simulation in Engineering Sciences</i> , 2015, 2, .	1.7	10
66	Effects of material and process parameters on in-situ consolidation. <i>International Journal of Material Forming</i> , 2019, 12, 491-503.	2.0	10
67	Incremental dynamic mode decomposition: A reduced-model learner operating at the low-data limit. <i>Comptes Rendus - Mecanique</i> , 2019, 347, 780-792.	2.1	10
68	A Data-Driven Learning Method for Constitutive Modeling: Application to Vascular Hyperelastic Soft Tissues. <i>Materials</i> , 2020, 13, 2319.	2.9	10
69	Tape surfaces characterization with persistence images. <i>AIMS Materials Science</i> , 2020, 7, 364-380.	1.4	10
70	Kinetic theory of colloidal suspensions: morphology, rheology, and migration. <i>Rheologica Acta</i> , 2013, 52, 557-577.	2.4	9
71	Nonincremental proper generalized decomposition solution of parametric uncoupled models defined in evolving domains. <i>International Journal for Numerical Methods in Engineering</i> , 2013, 93, 887-904.	2.8	8
72	Toward an optimisation of the reactive resin transfer molding process: thermo-chemico-mechanical coupled simulations. <i>International Journal of Material Forming</i> , 2014, 7, 249-258.	2.0	8

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73	Real-time in silico experiments on gene regulatory networks and surgery simulation on handheld devices. <i>Journal of Computational Surgery</i> , 2014, 1, 1.	0.6	8
74	Spurious-free interpolations for non-intrusive PGD-based parametric solutions: Application to composites forming processes. <i>International Journal of Material Forming</i> , 2021, 14, 83-95.	2.0	8
75	Advanced thermal simulation of processes involving materials exhibiting fine-scale microstructures. <i>International Journal of Material Forming</i> , 2016, 9, 179-202.	2.0	7
76	Reduced order modelling for efficient numerical optimisation of a hot-wall chemical vapour deposition reactor. <i>International Journal of Numerical Methods for Heat and Fluid Flow</i> , 2017, 27, 1602-1622.	2.8	7
77	Seismic vulnerability assessment of buried pipelines: A 3D parametric study. <i>Soil Dynamics and Earthquake Engineering</i> , 2021, 143, 106627.	3.8	7
78	Non-intrusive proper generalized decomposition involving space and parameters: application to the mechanical modeling of 3D woven fabrics. <i>Advanced Modeling and Simulation in Engineering Sciences</i> , 2019, 6, .	1.7	7
79	Tape surface characterization and classification in automated tape placement processability: Modeling and numerical analysis. <i>AIMS Materials Science</i> , 2018, 5, 870-888.	1.4	7
80	A first step toward a PGD-based time parallelisation strategy. <i>European Journal of Computational Mechanics</i> , 2012, 21, 300-311.	0.6	6
81	Simulation-based adaptative toolpath generation in milling processes. <i>International Journal of Machining and Machinability of Materials</i> , 2014, 15, 263.	0.1	6
82	Advanced model order reduction and artificial intelligence techniques empowering advanced structural mechanics simulations: application to crash test analyses. <i>Mechanics and Industry</i> , 2019, 20, 804.	1.3	6
83	A separated representation involving multiple time scales within the Proper Generalized Decomposition framework. <i>Advanced Modeling and Simulation in Engineering Sciences</i> , 2021, 8, .	1.7	6
84	One and two-fiber orientation kinetic theories of fiber suspensions. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2013, 200, 17-33.	2.4	5
85	Online Prediction of Machining Distortion of Aeronautical Parts Caused by Re-Equilibration of Residual Stresses. <i>Key Engineering Materials</i> , 2014, 611-612, 1327-1335.	0.4	5
86	A reduced order modeling approach for optimal allocation of Distributed Generation in power distribution systems. , 2016, , .		5
87	High-resolution elastic analysis of thin-ply composite laminates. <i>Composite Structures</i> , 2017, 172, 15-21.	5.8	5
88	A cyber physical system approach for composite part: From smart manufacturing to predictive maintenance. <i>AIP Conference Proceedings</i> , 2018, , .	0.4	5
89	Towards parametric RTM processes: The interpolative mapping. <i>AIP Conference Proceedings</i> , 2019, , .	0.4	5
90	Parametric evaluation of part distortion in additive manufacturing processes. <i>International Journal of Material Forming</i> , 2020, 13, 29-41.	2.0	5

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91	Proper Generalized Decomposition with time adaptive space separation for transient wave propagation problems in separable domains. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2021, 380, 113755.	6.6	5
92	Domain decomposition involving subdomain separable space representations for solving parametric problems in complex geometries. <i>Advanced Modeling and Simulation in Engineering Sciences</i> , 2022, 9, .	1.7	5
93	Engineering empowered by physics-based and data-driven hybrid models: A methodological overview. <i>International Journal of Material Forming</i> , 2022, 15, 1.	2.0	5
94	First Steps towards Parametric Modeling of FSW Processes by Using Advanced Separated Representations: Numerical Techniques. <i>Key Engineering Materials</i> , 2014, 611-612, 513-520.	0.4	4
95	On the multi-scale description of electrical conducting suspensions involving perfectly dispersed rods. <i>Advanced Modeling and Simulation in Engineering Sciences</i> , 2015, 2, .	1.7	4
96	Separated Representations of Incremental Elastoplastic Simulations. <i>Key Engineering Materials</i> , 0, 651-653, 1285-1293.	0.4	4
97	Kinetic Theory Modeling and Efficient Numerical Simulation of Gene Regulatory Networks Based on Qualitative Descriptions. <i>Entropy</i> , 2015, 17, 1896-1915.	2.2	4
98	Wavelet-based multiscale proper generalized decomposition. <i>Comptes Rendus - Mecanique</i> , 2018, 346, 485-500.	2.1	4
99	Multiscale proper generalized decomposition based on the partition of unity. <i>International Journal for Numerical Methods in Engineering</i> , 2019, 120, 727-747.	2.8	4
100	A local multiple proper generalized decomposition based on the partition of unity. <i>International Journal for Numerical Methods in Engineering</i> , 2019, 120, 139-152.	2.8	4
101	Tensor Representation of Non-linear Models Using Cross Approximations. <i>Journal of Scientific Computing</i> , 2019, 81, 22-47.	2.3	4
102	Poroelectric properties identification through micro indentation modeled by using the proper generalized decomposition. , 2016, , .		3
103	In-plane/out-of-plane separated representations of updated Lagrangian descriptions of viscoplastic flow models in plate domains. <i>Comptes Rendus - Mecanique</i> , 2016, 344, 225-235.	2.1	3
104	Algebraic and Parametric Solvers for the Power Flow Problem: Towards Real-Time and Accuracy-Guaranteed Simulation of Electric Systems. <i>Archives of Computational Methods in Engineering</i> , 2018, 25, 1003-1026.	10.2	3
105	PGD-Based Model Reduction for Surgery Simulation: Solid Dynamics and Contact Detection. <i>Lecture Notes in Computer Science</i> , 2014, , 193-202.	1.3	2
106	Shape Parametrization & Morphing in Sheet-Metal Forming. <i>Procedia Manufacturing</i> , 2020, 47, 702-706.	1.9	2
107	On the High-Resolution Discretization of the Maxwell Equations in a Composite Tape and the Heating Effects Induced by the Dielectric Losses. <i>Computation</i> , 2022, 10, 24.	2.0	2
108	Exploring space separation techniques for 3D elastic waves simulations. <i>Computational Mechanics</i> , 2022, 69, 1147-1163.	4.0	2

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109	Parametric Curves Metamodelling Based on Data Clustering, Data Alignment, POD-Based Modes Extraction and PGD-Based Nonlinear Regressions. <i>Frontiers in Materials</i> , 0, 9, .	2.4	2
110	Real-Time Control of the Heating of an Airfoil. , 2012, , .		1
111	A manifold learning approach to data-driven computational materials and processes. <i>AIP Conference Proceedings</i> , 2017, , .	0.4	1
112	A non-local void dynamics modeling and simulation using the Proper Generalized Decomposition. <i>International Journal of Material Forming</i> , 2020, 13, 533-546.	2.0	1
113	From Component Reduced Models to Reduced Modelling of Multi-Component Systems. <i>Procedia Manufacturing</i> , 2020, 47, 696-701.	1.9	1
114	Empowering Materials Processing and Performance from Data and AI. <i>Materials</i> , 2021, 14, 4409.	2.9	1
115	Coupling finite elements and reduced approximation bases. <i>European Journal of Computational Mechanics</i> , 0, , 445-463.	0.0	1
116	A First Approach Toward a Proper Generalized Decomposition Based Time Parallelization. <i>Key Engineering Materials</i> , 2012, 504-506, 461-466.	0.4	0
117	Real Time Simulation of Non-Linear Solids by PGD Techniques. <i>Key Engineering Materials</i> , 2012, 504-506, 467-472.	0.4	0
118	PGD-BEM Applied to the Nonlinear Heat Equation. , 2012, , .		0
119	Real-Time Simulation for Virtual Surgery in a PGD Framework. , 2012, , .		0
120	Towards Online Control of Forming Processes Involving Residual Stresses: Defining Multi-Parametric & Computational vademecums. <i>Key Engineering Materials</i> , 0, 554-557, 699-705.	0.4	0
121	Elastic-Plastic Reduced Order Modelling of Sheet and Profiles Bending-under-Tension. <i>Key Engineering Materials</i> , 2014, 611-612, 1371-1379.	0.4	0
122	Towards a Kinetic Theory Description of Electrical Conduction in Perfectly Dispersed CNT Nanocomposites. , 2015, , 167-202.		0
123	On the model order reduction of confined plasticity. <i>AIP Conference Proceedings</i> , 2016, , .	0.4	0
124	From elastic homogenization to upscaling of non-Newtonian fluid flows in porous media. <i>International Journal of Material Forming</i> , 2018, 11, 607-617.	2.0	0
125	Improving the realism of mixed reality through physical simulation. , 2018, , .		0
126	Model and system learners, optimal process constructors and kinetic theory-based goal-oriented design: A new paradigm in materials and processes informatics. <i>AIP Conference Proceedings</i> , 2018, , .	0.4	0

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127	Parametric numerical solutions of additive manufacturing processes. AIP Conference Proceedings, 2019, , .	0.4	0
128	Parametric inverse impulse response based on reduced order modeling and randomized excitations. Mechanical Systems and Signal Processing, 2020, 135, 106392.	8.0	0