Francisco Chinesta

List of Publications by Year
in descending order

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	Digital twins that learn and correct themselves. International Journal for Numerical Methods in Engineering, 2022, 123, 3034-3044.	2.8	25
2	Surrogate parametric metamodel based on Optimal Transport. Mathematics and Computers in Simulation, 2022, 194, 36-63.	4.4	14
3	On the High-Resolution Discretization of the Maxwell Equations in a Composite Tape and the Heating Effects Induced by the Dielectric Losses. Computation, 2022, 10, 24.	2.0	2
4	Exploring space separation techniques for 3D elastic waves simulations. Computational Mechanics, 2022, 69, 1147-1163.	4.0	2
5	Domain decomposition involving subdomain separable space representations for solving parametric problems in complex geometries. Advanced Modeling and Simulation in Engineering Sciences, 2022, 9, .	1.7	5
6	Engineering empowered by physics-based and data-driven hybrid models: A methodological overview. International Journal of Material Forming, 2022, 15, 1.	2.0	5
7	Spurious-free interpolations for non-intrusive PGD-based parametric solutions: Application to composites forming processes. International Journal of Material Forming, 2021, 14, 83-95.	2.0	8
8	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
9	Learning non-Markovian physics from data. Journal of Computational Physics, 2021, 428, 109982.	3.8	12
10	Structure-preserving neural networks. Journal of Computational Physics, 2021, 426, 109950.	3.8	25
11	Data-Driven Modeling for Multiphysics Parametrized Problems-Application to Induction Hardening Process. Metals, 2021, 11, 738.	2.3	11
12	Seismic vulnerability assessment of buried pipelines: A 3D parametric study. Soil Dynamics and Earthquake Engineering, 2021, 143, 106627.	3.8	7
13	Proper Generalized Decomposition with time adaptive space separation for transient wave propagation problems in separable domains. Computer Methods in Applied Mechanics and Engineering, 2021, 380, 113755.	6.6	5
14	Empowering Materials Processing and Performance from Data and AI. Materials, 2021, 14, 4409.	2.9	1
15	Learning stable reduced-order models for hybrid twins. Data-Centric Engineering, 2021, 2, .	2.3	13
16	A separated representation involving multiple time scales within the Proper Generalized Decomposition framework. Advanced Modeling and Simulation in Engineering Sciences, 2021, 8, .	1.7	6
17	Parametric evaluation of part distortion in additive manufacturing processes. International Journal of Material Forming, 2020, 13, 29-41.	2.0	5
18	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

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19	A non-local void dynamics modeling and simulation using the Proper Generalized Decomposition. International Journal of Material Forming, 2020, 13, 533-546.	2.0	1
20	Parametric inverse impulse response based on reduced order modeling and randomized excitations. Mechanical Systems and Signal Processing, 2020, 135, 106392.	8.0	0
21	Application of Machine Learning Tools for the Improvement of Reactive Extrusion Simulation. Macromolecular Materials and Engineering, 2020, 305, 2000375.	3.6	15
22	Shape Parametrization & Morphing in Sheet-Metal Forming. Procedia Manufacturing, 2020, 47, 702-706.	1.9	2
23	On the Data-Driven Modeling of Reactive Extrusion. Fluids, 2020, 5, 94.	1.7	15
24	From Component Reduced Models to Reduced Modelling of Multi-Component Systems. Procedia Manufacturing, 2020, 47, 696-701.	1.9	1
25	A Data-Driven Learning Method for Constitutive Modeling: Application to Vascular Hyperelastic Soft Tissues. Materials, 2020, 13, 2319.	2.9	10
26	Nonlinear Regression Operating on Microstructures Described from Topological Data Analysis for the Real-Time Prediction of Effective Properties. Materials, 2020, 13, 2335.	2.9	12
27	Tape surfaces characterization with persistence images. AIMS Materials Science, 2020, 7, 364-380.	1.4	10
28	Effects of material and process parameters on in-situ consolidation. International Journal of Material Forming, 2019, 12, 491-503.	2.0	10
29	Thermodynamically consistent data-driven computational mechanics. Continuum Mechanics and Thermodynamics, 2019, 31, 239-253.	2.2	65
30	Parametric numerical solutions of additive manufacturing processes. AIP Conference Proceedings, 2019, , .	0.4	0
31	Towards parametric RTM processes: The interpolative mapping. AIP Conference Proceedings, 2019, , .	0.4	5
32	Multiscale proper generalized decomposition based on the partition of unity. International Journal for Numerical Methods in Engineering, 2019, 120, 727-747.	2.8	4
33	A local multiple proper generalized decomposition based on the partition of unity. International Journal for Numerical Methods in Engineering, 2019, 120, 139-152.	2.8	4
34	Tensor Representation of Non-linear Models Using Cross Approximations. Journal of Scientific Computing, 2019, 81, 22-47.	2.3	4
35	Advanced model order reduction and artificial intelligence techniques empowering advanced structural mechanics simulations: application to crash test analyses. Mechanics and Industry, 2019, 20, 804.	1.3	6
36	Incremental dynamic mode decomposition: A reduced-model learner operating at the low-data limit. Comptes Rendus - Mecanique, 2019, 347, 780-792.	2.1	10

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37	Data-driven modeling and learning in science and engineering. Comptes Rendus - Mecanique, 2019, 347, 845-855.	2.1	150
38	Hybrid constitutive modeling: data-driven learning of corrections to plasticity models. International Journal of Material Forming, 2019, 12, 717-725.	2.0	56
39	Non-intrusive Sparse Subspace Learning for Parametrized Problems. Archives of Computational Methods in Engineering, 2019, 26, 303-326.	10.2	35
40	Non-intrusive proper generalized decomposition involving space and parameters: application to the mechanical modeling of 3D woven fabrics. Advanced Modeling and Simulation in Engineering Sciences, 2019, 6, .	1.7	7
41	A Manifold Learning Approach to Data-Driven Computational Elasticity and Inelasticity. Archives of Computational Methods in Engineering, 2018, 25, 47-57.	10.2	153
42	Algebraic and Parametric Solvers for the Power Flow Problem: Towards Real-Time and Accuracy-Guaranteed Simulation of Electric Systems. Archives of Computational Methods in Engineering, 2018, 25, 1003-1026.	10.2	3
43	From elastic homogenization to upscaling of non-Newtonian fluid flows in porous media. International Journal of Material Forming, 2018, 11, 607-617.	2.0	0
44	A Multidimensional Data-Driven Sparse Identification Technique: The Sparse Proper Generalized Decomposition. Complexity, 2018, 2018, 1-11.	1.6	49
45	Improving the realism of mixed reality through physical simulation. , 2018, , .		0
46	A cyber physical system approach for composite part: From smart manufacturing to predictive maintenance. AIP Conference Proceedings, 2018, , .	0.4	5
47	Model and system learners, optimal process constructors and kinetic theory-based goal-oriented design: A new paradigm in materials and processes informatics. AIP Conference Proceedings, 2018, , .	0.4	0
48	Reduced order modeling for physically-based augmented reality. Computer Methods in Applied Mechanics and Engineering, 2018, 341, 53-70.	6.6	14
49	Wavelet-based multiscale proper generalized decomposition. Comptes Rendus - Mecanique, 2018, 346, 485-500.	2.1	4
50	Advanced parametric space-frequency separated representations in structural dynamics: A harmonicâ€"modal hybrid approach. Comptes Rendus - Mecanique, 2018, 346, 590-602.	2.1	11
51	Reduced-order modeling of soft robots. PLoS ONE, 2018, 13, e0192052.	2.5	30
52	Tape surface characterization and classification in automated tape placement processability: Modeling and numerical analysis. AIMS Materials Science, 2018, 5, 870-888.	1.4	7
53	Microstructural analysis of pre-impreganted tapes consolidation. International Journal of Material Forming, 2017, 10, 369-378.	2.0	15
54	Local proper generalized decomposition. International Journal for Numerical Methods in Engineering, 2017, 112, 1715-1732.	2.8	16

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55	Modeling soft, permeable matter with the proper generalized decomposition (PGD) approach, and verification by means of nanoindentation. Soft Matter, 2017, 13, 4482-4493.	2.7	17
56	High-resolution elastic analysis of thin-ply composite laminates. Composite Structures, 2017, 172, 15-21.	5.8	5
57	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
58	Data-driven non-linear elasticity: constitutive manifold construction and problem discretization. Computational Mechanics, 2017, 60, 813-826.	4.0	101
59	Reduced order modelling for efficient numerical optimisation of a hot-wall chemical vapour deposition reactor. International Journal of Numerical Methods for Heat and Fluid Flow, 2017, 27, 1602-1622.	2.8	7
60	A manifold learning approach to data-driven computational materials and processes. AIP Conference Proceedings, 2017, , .	0.4	1
61	Review of Reduced Order Models for Heat and Moisture Transfer in Building Physics with Emphasis in PGD Approaches. Archives of Computational Methods in Engineering, 2017, 24, 655-667.	10.2	11
62	Data-Driven Computational Plasticity. Procedia Engineering, 2017, 207, 209-214.	1.2	23
63	On the model order reduction of confined plasticity. AIP Conference Proceedings, 2016, , .	0.4	0
64	Poroelastic properties identification through micro indentation modeled by using the proper generalized decomposition. , 2016, , .		3
65	A reduced order modeling approach for optimal allocation of Distributed Generation in power distribution systems. , 2016, , .		5
66	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
67	On the use of model order reduction for simulating automated fibre placement processes. Advanced Modeling and Simulation in Engineering Sciences, 2016, 3, .	1.7	16
68	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
69	Efficient PGD-based dynamic calculation of non-linear soil behavior. Comptes Rendus - Mecanique, 2016, 344, 24-41.	2.1	17
70	Computational Patient Avatars for Surgery Planning. Annals of Biomedical Engineering, 2016, 44, 35-45.	2.5	30
71	Advanced thermal simulation of processes involving materials exhibiting fine-scale microstructures. International Journal of Material Forming, 2016, 9, 179-202.	2.0	7
72	On the space separated representation when addressing the solution of PDE in complex domains. Discrete and Continuous Dynamical Systems - Series S, 2016, 9, 475-500.	1.1	17

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73	Parametric solution of the Rayleigh-Benard convection model by using the PGD. International Journal of Numerical Methods for Heat and Fluid Flow, 2015, 25, 1252-1281.	2.8	19
74	On the multi-scale description of electrical conducting suspensions involving perfectly dispersed rods. Advanced Modeling and Simulation in Engineering Sciences, 2015, 2, .	1.7	4
75	Towards a pancreatic surgery simulator based on model order reduction. Advanced Modeling and Simulation in Engineering Sciences, 2015, 2, .	1.7	10
76	An error estimator for real-time simulators based on model order reduction. Advanced Modeling and Simulation in Engineering Sciences, 2015, 2, .	1.7	17
77	Towards a Kinetic Theory Description of Electrical Conduction in Perfectly Dispersed CNT Nanocomposites. , 2015, , 167-202.		0
78	Kinetic Theory Modeling and Efficient Numerical Simulation of Gene Regulatory Networks Based on Qualitative Descriptions. Entropy, 2015, 17, 1896-1915.	2.2	4
79	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
80	On the space-time separated representation of integral linear viscoelastic models. Comptes Rendus - Mecanique, 2015, 343, 247-263.	2.1	13
81	Realâ€time monitoring of thermal processes by reducedâ€order modeling. International Journal for Numerical Methods in Engineering, 2015, 102, 991-1017.	2.8	48
82	Proper Generalised Decomposition for heat and moisture multizone modelling. Energy and Buildings, 2015, 105, 334-351.	6.7	15
83	3D Modeling of squeeze flows occurring in composite laminates. International Journal of Material Forming, 2015, 8, 73-83.	2.0	49
84	Parametric 3D elastic solutions of beams involved in frame structures. Advances in Aircraft and Spacecraft Science, 2015, 2, 233-248.	0.5	15
85	PGD-Based Model Reduction for Surgery Simulation: Solid Dynamics and Contact Detection. Lecture Notes in Computer Science, 2014, , 193-202.	1.3	2
86	Online Prediction of Machining Distortion of Aeronautical Parts Caused by Re-Equilibration of Residual Stresses. Key Engineering Materials, 2014, 611-612, 1327-1335.	0.4	5
87	Elastic-Plastic Reduced Order Modelling of Sheet and Profiles Bending-under-Tension. Key Engineering Materials, 2014, 611-612, 1371-1379.	0.4	0
88	First Steps towards Parametric Modeling of FSW Processes by Using Advanced Separated Representations: Numerical Techniques. Key Engineering Materials, 2014, 611-612, 513-520.	0.4	4
89	Parametric solutions involving geometry: A step towards efficient shape optimization. Computer Methods in Applied Mechanics and Engineering, 2014, 268, 178-193.	6.6	69
90	Toward an optimisation of the reactive resin transfer molding process: thermo-chemico-mechanical coupled simulations. International Journal of Material Forming, 2014, 7, 249-258.	2.0	8

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91	Separated representations of 3D elastic solutions in shell geometries. Advanced Modeling and Simulation in Engineering Sciences, 2014, 1, .	1.7	42
92	The Proper Generalized Decomposition for Advanced Numerical Simulations. SpringerBriefs in Applied Sciences and Technology, 2014, , .	0.4	175
93	Realâ€time direct integration of reduced solid dynamics equations. International Journal for Numerical Methods in Engineering, 2014, 99, 633-653.	2.8	40
94	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
95	Real time simulation for computational surgery: a review. Advanced Modeling and Simulation in Engineering Sciences, 2014, 1, 11.	1.7	33
96	Simulation-based adaptive toolpath generation in milling processes. International Journal of Machining and Machinability of Materials, 2014, 15, 263.	0.1	6
97	PGD-Based Modeling of Materials, Structures and Processes. ESAFORM Bookseries on Material Forming, 2014, , .	0.1	31
98	From Single-Scale to Two-Scales Kinetic Theory Descriptions of Rods Suspensions. Archives of Computational Methods in Engineering, 2013, 20, 1-29.	10.2	21
99	Kinetic theory of colloidal suspensions: morphology, rheology, and migration. Rheologica Acta, 2013, 52, 557-577.	2.4	9
100	One and two-fiber orientation kinetic theories of fiber suspensions. Journal of Non-Newtonian Fluid Mechanics, 2013, 200, 17-33.	2.4	5
101	Model order reduction in hyperelasticity: a proper generalized decomposition approach. International Journal for Numerical Methods in Engineering, 2013, 96, 129-149.	2.8	37
102	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
103	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
104	Nonincremental proper generalized decomposition solution of parametric uncoupled models defined in evolving domains. International Journal for Numerical Methods in Engineering, 2013, 93, 887-904.	2.8	8
105	Kinetic Theory Microstructure Modeling in Concentrated Suspensions. Entropy, 2013, 15, 2805-2832.	2.2	20
106	Towards a framework for nonâ€linear thermal models in shell domains. International Journal of Numerical Methods for Heat and Fluid Flow, 2013, 23, 55-73.	2.8	30
107	A first step toward a PGD-based time parallelisation strategy. European Journal of Computational Mechanics, 2012, 21, 300-311.	0.6	6
108	A First Approach Toward a Proper Generalized Decomposition Based Time Parallelization. Key Engineering Materials, 2012, 504-506, 461-466.	0.4	0

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109	Real Time Simulation of Non-Linear Solids by PGD Techniques. Key Engineering Materials, 2012, 504-506, 467-472.	0.4	0
110	PGD-BEM Applied to the Nonlinear Heat Equation. , 2012, , .		0
111	Real-Time Control of the Heating of an Airfoil. , 2012, , .		1
112	Real-Time Simulation for Virtual Surgery in a PGD Framework. , 2012, , .		0
113	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
114	Proper generalized decomposition of time–multiscale models. International Journal for Numerical Methods in Engineering, 2012, 90, 569-596.	2.8	52
115	Efficient mold cooling optimization by using model reduction. International Journal of Material Forming, 2011, 4, 73-82.	2.0	11
116	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
117	Recent advances on the use of separated representations. International Journal for Numerical Methods in Engineering, 2010, 81, 637-659.	2.8	97
118	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
119	An efficient reduced simulation of residual stresses in composite forming processes. International Journal of Material Forming, 2010, 3, 1339-1350.	2.0	24
120	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
121	Model order reduction for hyperelastic materials. International Journal for Numerical Methods in Engineering, 2010, 81, 1180-1206.	2.8	55
122	Coupling finite elements and reduced approximation bases. European Journal of Computational Mechanics, 2009, 18, 445-463.	0.6	12
123	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
124	Towards Online Control of Forming Processes Involving Residual Stresses: Defining Multi-Parametric <i>Computational vademecums</i>. Key Engineering Materials, 0, 554-557, 699-705.	0.4	0
125	Improving Computational Efficiency in LCM by Using Computational Geometry and Model Reduction Techniques. Key Engineering Materials, 0, 611-612, 339-343.	0.4	17
126	Separated Representations of Incremental Elastoplastic Simulations. Key Engineering Materials, 0, 651-653, 1285-1293.	0.4	4

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127	Coupling finite elements and reduced approximation bases. European Journal of Computational Mechanics, 0, , 445-463.	0.0	1
128	Parametric Curves Metamodelling Based on Data Clustering, Data Alignment, POD-Based Modes Extraction and PGD-Based Nonlinear Regressions. Frontiers in Materials, 0, 9, .	2.4	2