Ludovic Noels

List of Publications by Year
in descending order

104 papers	2,682 citations
186265 28 h-index	206112 48 g-index
107 all docs	107 docs citations
107 times ranked	1908 citing authors

#	Article	IF	Citations
1	Imposing periodic boundary condition on arbitrary meshes by polynomial interpolation. Computational Materials Science, 2012, 55, 390-406.	3.0	195
2	Computational biology â€" Modeling of primary blast effects on the central nervous system. NeuroImage, 2009, 47, T10-T20.	4.2	182
3	A scalable 3D fracture and fragmentation algorithm based on a hybrid, discontinuous Galerkin, cohesive element method. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 326-344.	6.6	118
4	Nonlinear compressibility effects in fluid-structure interaction and their implications on the air-blast loading of structures. Journal of Applied Physics, 2006, 100, 063519.	2.5	103
5	A recurrent neural network-accelerated multi-scale model for elasto-plastic heterogeneous materials subjected to random cyclic and non-proportional loading paths. Computer Methods in Applied Mechanics and Engineering, 2020, 369, 113234.	6.6	97
6	A general discontinuous Galerkin method for finite hyperelasticity. Formulation and numerical applications. International Journal for Numerical Methods in Engineering, 2006, 68, 64-97.	2.8	89
7	A Tutorial on Bayesian Inference to Identify Material Parameters in Solid Mechanics. Archives of Computational Methods in Engineering, 2020, 27, 361-385.	10.2	83
8	A large strain hyperelastic viscoelastic-viscoplastic-damage constitutive model based on a multi-mechanism non-local damage continuum for amorphous glassy polymers. International Journal of Solids and Structures, 2016, 96, 192-216.	2.7	72
9	Identifying elastoplastic parameters with Bayes'™ theorem considering output error, input error and model uncertainty. Probabilistic Engineering Mechanics, 2019, 55, 28-41.	2.7	66
10	Fluidâ€"Structure Interaction Effects in the Dynamic Response of Free-Standing Plates to Uniform Shock Loading. Journal of Applied Mechanics, Transactions ASME, 2007, 74, 1042-1045.	2.2	65
11	Numerical simulation of the fluidâ€"structure interaction between air blast waves and free-standing plates. Computers and Structures, 2007, 85, 923-931.	4.4	65
12	An explicit discontinuous Galerkin method for non‐linear solid dynamics: Formulation, parallel implementation and scalability properties. International Journal for Numerical Methods in Engineering, 2008, 74, 1393-1420.	2.8	64
13	A virtual test facility for the efficient simulation of solid material response under strong shock and detonation wave loading. Engineering With Computers, 2006, 22, 325-347.	6.1	63
14	A combined incremental-secant mean-field homogenization scheme with per-phase residual strains for elasto-plastic composites. International Journal of Plasticity, 2013, 51, 80-102.	8.8	57
15	A microâ€"meso-model of intra-laminar fracture in fiber-reinforced composites based on a discontinuous Galerkin/cohesive zone method. Engineering Fracture Mechanics, 2013, 104, 162-183.	4.3	54
16	Computational homogenization of cellular materials. International Journal of Solids and Structures, 2014, 51, 2183-2203.	2.7	54
17	A new discontinuous Galerkin method for Kirchhoffâ€"Love shells. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 2901-2929.	6.6	49
18	An incremental-secant mean-field homogenization method with second statistical moments for elasto-visco-plastic composite materials. Mechanics of Materials, 2017, 114, 180-200.	3.2	46

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19	Combined implicit/explicit time-integration algorithms for the numerical simulation of sheet metal forming. Journal of Computational and Applied Mathematics, 2004, 168, 331-339.	2.0	40
20	A multiscale mean-field homogenization method for fiber-reinforced composites with gradient-enhanced damage models. Computer Methods in Applied Mechanics and Engineering, 2012, 233-236, 164-179.	6.6	39
21	An implicit-gradient-enhanced incremental-secant mean-field homogenization scheme for elasto-plastic composites with damage. International Journal of Solids and Structures, 2013, 50, 3843-3860.	2.7	39
22	Bayesian inference of non-linear multiscale model parameters accelerated by a Deep Neural Network. Computer Methods in Applied Mechanics and Engineering, 2020, 360, 112693.	6.6	38
23	Multiscale computational homogenization methods with a gradient enhanced scheme based on the discontinuous Galerkin formulation. Computer Methods in Applied Mechanics and Engineering, 2013, 260, 63-77.	6.6	36
24	An XFEM/CZM implementation for massively parallel simulations of composites fracture. Composite Structures, 2015, 125, 542-557.	5.8	36
25	A full–discontinuous Galerkin formulation of nonlinear Kirchhoff–Love shells: elasto–plastic finite deformations, parallel computation, and fracture applications. International Journal for Numerical Methods in Engineering, 2013, 93, 80-117.	2.8	34
26	Bayesian identification of Mean-Field Homogenization model parameters and uncertain matrix behavior in non-aligned short fiber composites. Composite Structures, 2019, 220, 64-80.	5.8	33
27	Comparative study of numerical explicit schemes for impact problems. International Journal of Impact Engineering, 2008, 35, 1688-1694.	5.0	32
28	A stochastic computational multiscale approach; Application to MEMS resonators. Computer Methods in Applied Mechanics and Engineering, 2015, 294, 141-167.	6.6	30
29	From SEM images to elastic responses: A stochastic multiscale analysis of UD fiber reinforced composites. Composite Structures, 2018, 189, 206-227.	5.8	30
30	A nonlocal approach of ductile failure incorporating void growth, internal necking, and shear dominated coalescence mechanisms. Journal of the Mechanics and Physics of Solids, 2020, 137, 103891.	4.8	30
31	An energy-based variational model of ferromagnetic hysteresis for finite element computations. Journal of Computational and Applied Mathematics, 2013, 246, 243-250.	2.0	27
32	A micromechanics-based non-local damage to crack transition framework for porous elastoplastic solids. International Journal of Plasticity, 2020, 127, 102631.	8.8	27
33	An energy–momentum conserving algorithm for non-linear hypoelastic constitutive models. International Journal for Numerical Methods in Engineering, 2004, 59, 83-114.	2.8	26
34	A study of composite laminates failure using an anisotropic gradient-enhanced damage mean-field homogenization model. Composite Structures, 2015, 126, 246-264.	5.8	26
35	Recurrent Neural Networks (RNNs) with dimensionality reduction and break down in computational mechanics; application to multi-scale localization step. Computer Methods in Applied Mechanics and Engineering, 2022, 390, 114476.	6.6	25
36	A Micro–Macroapproach to Predict Stiction due to Surface Contact in Microelectromechanical Systems. Journal of Microelectromechanical Systems, 2011, 20, 976-990.	2.5	24

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37	Elastic damage to crack transition in a coupled non-local implicit discontinuous Galerkin/extrinsic cohesive law framework. Computer Methods in Applied Mechanics and Engineering, 2014, 279, 379-409.	6.6	24
38	Unified treatment of microscopic boundary conditions and efficient algorithms for estimating tangent operators of the homogenized behavior in the computational homogenization method. Computational Mechanics, 2017, 59, 483-505.	4.0	22
39	3D finite element formulation for mechanical–electrophysiological coupling in axonopathy. Computer Methods in Applied Mechanics and Engineering, 2019, 346, 1025-1050.	6.6	21
40	A one field full discontinuous Galerkin method for Kirchhoff–Love shells applied to fracture mechanics. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 3223-3241.	6.6	20
41	An incremental-secant mean-field homogenization method with second statistical moments for elasto-plastic composite materials. Philosophical Magazine, 2015, 95, 3348-3384.	1.6	20
42	A micro-mechanical model of reinforced polymer failure with length scale effects and predictive capabilities. Validation on carbon fiber reinforced high-crosslinked RTM6 epoxy resin. Mechanics of Materials, 2019, 133, 193-213.	3.2	20
43	Alternative Approaches for the Derivation of Discontinuous Galerkin Methods for Nonlinear Mechanics. Journal of Applied Mechanics, Transactions ASME, 2007, 74, 1031-1036.	2.2	19
44	An energy momentum conserving algorithm using the variational formulation of visco-plastic updates. International Journal for Numerical Methods in Engineering, 2006, 65, 904-942.	2.8	18
45	A micro-model for elasto-plastic adhesive–contact in micro-switches: Application to cyclic loading. Tribology International, 2013, 57, 137-146.	5.9	18
46	Combined implicit/explicit algorithms for crashworthiness analysis. International Journal of Impact Engineering, 2004, 30, 1161-1177.	5.0	17
47	A discontinuous Galerkin formulation of non–linear Kirchhoff–Love shells. International Journal for Numerical Methods in Engineering, 2009, 78, 296-323.	2.8	17
48	An inverse micro-mechanical analysis toward the stochastic homogenization of nonlinear random composites. Computer Methods in Applied Mechanics and Engineering, 2019, 348, 97-138.	6.6	17
49	A damage to crack transition model accounting for stress triaxiality formulated in a hybrid nonlocal implicit discontinuous Galerkin–cohesive band model framework. International Journal for Numerical Methods in Engineering, 2018, 113, 374-410.	2.8	16
50	Micro-mechanics and data-driven based reduced order models for multi-scale analyses of woven composites. Composite Structures, 2021, 270, 114058.	5.8	16
51	Experimental and computational micro-mechanical investigations of compressive properties of polypropylene/multi-walled carbon nanotubes nanocomposite foams. Mechanics of Materials, 2015, 91, 95-118.	3.2	15
52	Multiscale modelling framework for the fracture of thin brittle polycrystalline films: application to polysilicon. Computational Mechanics, 2015, 55, 73-91.	4.0	14
53	Energy conserving balance of explicit time steps to combine implicit and explicit algorithms in structural dynamics. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 2169-2192.	6.6	13
54	Serial FEM/XFEM-Based Update of Preoperative Brain Images Using Intraoperative MRI. International Journal of Biomedical Imaging, 2012, 2012, 1-17.	3.9	13

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55	Ductile fracture of high strength steels with morphological anisotropy, Part I: Characterization, testing, and void nucleation law. Engineering Fracture Mechanics, 2021, 244, 107569.	4.3	13
56	Micromechanics-based material networks revisited from the interaction viewpoint; robust and efficient implementation for multi-phase composites. European Journal of Mechanics, A/Solids, 2022, 91, 104384.	3.7	13
57	A Bayesian Framework to Identify Random Parameter Fields Based on the Copula Theorem and Gaussian Fields: Application to Polycrystalline Materials. Journal of Applied Mechanics, Transactions ASME, 2019, 86, .	2.2	13
58	Automatic time stepping algorithms for implicit numerical simulations of non-linear dynamics. Advances in Engineering Software, 2002, 33, 589-603.	3.8	12
59	Influence of adhesive rough surface contact on microswitches. Journal of Applied Physics, 2009, 106, .	2.5	12
60	A two-scale model predicting the mechanical behavior of nanocrystalline solids. Journal of the Mechanics and Physics of Solids, 2013, 61, 1895-1914.	4.8	12
61	A stochastic multi-scale approach for the modeling of thermo-elastic damping in micro-resonators. Computer Methods in Applied Mechanics and Engineering, 2016, 310, 802-839.	6.6	12
62	A computational stochastic multiscale methodology for MEMS structures involving adhesive contact. Tribology International, 2017, 110, 401-425.	5.9	12
63	Quasicontinuum study of the shear behavior of defective tilt grain boundaries in Cu. Acta Materialia, 2014, 64, 419-428.	7.9	11
64	A first-order energy-dissipative momentum-conserving scheme for elasto-plasticity using the variational updates formulation. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 706-726.	6.6	10
65	Interaction-based material network: A general framework for (porous) microstructured materials. Computer Methods in Applied Mechanics and Engineering, 2022, 389, 114300.	6.6	10
66	On the use of large time steps with an energy momentum conserving algorithm for non-linear hypoelastic constitutive models. International Journal of Solids and Structures, 2004, 41, 663-693.	2.7	9
67	Propagation of material and surface profile uncertainties on MEMS micro€resonators using a stochastic second€order computational multi€scale approach. International Journal for Numerical Methods in Engineering, 2017, 111, 26-68.	2.8	9
68	Self-adapting time integration management in crash-worthiness and sheet metal forming computations. International Journal of Vehicle Design, 2002, 30, 67.	0.3	8
69	Computational generation of open-foam representative volume elements with morphological control using distance fields. European Journal of Mechanics, A/Solids, 2019, 78, 103847.	3.7	7
70	A finite strain incremental-secant homogenization model for elasto-plastic composites. Computer Methods in Applied Mechanics and Engineering, 2019, 347, 754-781.	6.6	7
71	Tensile failure model of carbon fibre in unidirectionally reinforced epoxy composites with mean-field homogenisation. Composite Structures, 2021, 273, 114270.	5.8	7
72	Combined implicit-explicit algorithms for non-linear structural dynamics. Revue Europeenne Des Elements, 2002, 11, 565-591.	0.1	6

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73	Simulation of crashworthiness problems with improved contact algorithms for implicit time integration. International Journal of Impact Engineering, 2006, 32, 799-825.	5.0	6
74	Multiscale computational modeling of deformation mechanics and intergranular fracture in nanocrystalline copper. Computational Materials Science, 2014, 90, 253-264.	3.0	6
75	Stochastic Multiscale Model of MEMS Stiction Accounting for High-Order Statistical Moments of Non-Gaussian Contacting Surfaces. Journal of Microelectromechanical Systems, 2018, 27, 137-155.	2.5	6
76	A micromechanicsâ€•based inverse study for stochastic order reduction of elastic UD fiber reinforced composites analyses. International Journal for Numerical Methods in Engineering, 2018, 115, 1430-1456.	2.8	6
77	A fracture framework for Eulerâ€"Bernoulli beams based on a full discontinuous Galerkin formulation/extrinsic cohesive law combination. International Journal for Numerical Methods in Engineering, 2011, 85, 1227-1251.	2.8	5
78	A probabilistic model for predicting the uncertainties of the humid stiction phenomenon on hard materials. Journal of Computational and Applied Mathematics, 2015, 289, 173-195.	2.0	5
79	A discontinuous Galerkin method for non-linear electro-thermo-mechanical problems: application to shape memory composite materials. Meccanica, 2018, 53, 1357-1401.	2.0	5
80	Ductile fracture of high strength steels with morphological anisotropy, Part II: Nonlocal micromechanics-based modeling. Engineering Fracture Mechanics, 2021, 248, 107716.	4.3	5
81	Automatic time stepping algorithms for implicit numerical simulations of blade/casing interactions.. International Journal of Crashworthiness, 2001, 6, 351-362.	1.9	4
82	A coupled electro-thermal Discontinuous Galerkin method. Journal of Computational Physics, 2017, 348, 231-258.	3.8	4
83	Simulation of complex impact problems with implicit time algorithms: Application to a turbo-engine blade loss problem. International Journal of Impact Engineering, 2005, 32, 358-386.	5.0	3
84	Per-phase spatial correlated damage models of UD fibre reinforced composites using mean-field homogenisation; applications to notched laminate failure and yarn failure of plain woven composites. Computers and Structures, 2021, 257, 106650.	4.4	3
85	Combined implicit/explicit algorithms for crashworthiness analysis. International Journal of Impact Engineering, 2004, 30, 1161-1161.	5.0	2
86	A Consistent Dissipative Time Integration Scheme for Structural Dynamics: Application to Rotordynamics. , 2004, , .		2
87	A New Discontinuous Galerkin Method for Non-Linear Mechanics. , 2006, , .		2
88	The fracture studies of polycrystalline silicon based MEMS. , 2013, , .		2
89	Piecewise-uniform homogenization of heterogeneous composites using a spatial decomposition based on inelastic micromechanics. Composite Structures, 2022, 295, 115836.	5.8	2
90	A one-field discontinuous Galerkin formulation of non-linear Kirchhoff-Love shells. International Journal of Material Forming, 2009, 2, 877-880.	2.0	1

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91	Validation tests of the full-discontinuous Galerkin/extrinsic cohesive law framework of Kirchhoff-Love shells. International Journal of Fracture, 2012, 178, 299-322.	2.2	1
92	Non-local Damage-Enhanced MFH for Multiscale Simulations of Composites. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 115-121.	0.5	1
93	A study of dry stiction phenomenon in MEMS using a computational stochastic multi-scale methodology. , 2016, , .		1
94	Stiction Failure in Microswitches Due to Elasto-Plastic Adhesive Contacts. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 67-74.	0.5	1
95	Analysis of an open foam generated from computerized tomography scans of physical foam samples. International Journal for Numerical Methods in Engineering, 2022, 123, 4267-4295.	2.8	1
96	An incremental–secant mean–field homogenization model enhanced with a non–associated pressure–dependent plasticity model. International Journal for Numerical Methods in Engineering, 2022, 123, 4616-4654.	2.8	1
97	DÃƒÂ©termination automatique de la taille du pas de temps pour les schÃƒÂ©mas implicites en dynamique non linÃƒÂ©aireAutomatic time-stepping algorithms for implicit schemes in non-linear dynamics. Mecanique Et Industries, 2002, 3, 63-77.	0.2	0
98	Prediction of stiction in microswitch systems. , 2010, , .		0
99	A new formulation of internal forces for non-linear hypoelastic constitutive models verifying conservation laws. , 2003, , 527-531.		0
100	Design of Microswitch Systems Avoiding Stiction due to Surface Contact. Conference Proceedings of the Society for Experimental Mechanics, 2011, , 189-195.	0.5	0
101	NUMERICAL PROPERTIES OF A DISCONTINUOUS GALERKIN FOMULATION FOR ELECTRO-THERMAL COUPLED PROBLEMS. , 2016, , .		0
102	A Stochastic Multi-Scale Model for Predicting MEMS Stiction Failure. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 1-8.	0.5	0
103	Automatic Time Stepping Algorithms for Implicit Numerical Simulations of Non-Linear Dynamics. , 0, , .		0
104	High temperature nanoindentation of iron: Experimental and computational study. Journal of Nuclear Materials, 2022, 567, 153815.	2.7	0