

Julien RÃ©thorÃ©

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/7511490/publications.pdf>

Version: 2024-02-01

122
papers

4,561
citations

81839

39
h-index

106281

65
g-index

128
all docs

128
docs citations

128
times ranked

2702
citing authors

#	ARTICLE	IF	CITATIONS
1	An energy-conserving scheme for dynamic crack growth using the eXtended finite element method. <i>International Journal for Numerical Methods in Engineering</i> , 2005, 63, 631-659.	1.5	204
2	Digital image correlation and fracture: an advanced technique for estimating stress intensity factors of 2D and 3D cracks. <i>Journal Physics D: Applied Physics</i> , 2009, 42, 214004.	1.3	190
3	Extended digital image correlation with crack shape optimization. <i>International Journal for Numerical Methods in Engineering</i> , 2008, 73, 248-272.	1.5	186
4	A two-scale approach for fluid flow in fractured porous media. <i>International Journal for Numerical Methods in Engineering</i> , 2006, 71, 780-800.	1.5	177
5	Efficient explicit time stepping for the eXtended Finite Element Method (X-FEM). <i>International Journal for Numerical Methods in Engineering</i> , 2006, 68, 911-939.	1.5	153
6	A two-scale model for fluid flow in an unsaturated porous medium with cohesive cracks. <i>Computational Mechanics</i> , 2008, 42, 227-238.	2.2	133
7	Three dimensional experimental and numerical multiscale analysis of a fatigue crack. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2010, 199, 1307-1325.	3.4	132
8	Estimation of mixed-mode stress intensity factors using digital image correlation and an interaction integral. <i>International Journal of Fracture</i> , 2005, 132, 65-79.	1.1	125
9	Multi-phase-field modeling of anisotropic crack propagation for polycrystalline materials. <i>Computational Mechanics</i> , 2017, 60, 289-314.	2.2	121
10	Shear-band capturing using a multiscale extended digital image correlation technique. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2007, 196, 5016-5030.	3.4	111
11	Dynamic crack propagation under mixed-mode loading “ Comparison between experiments and X-FEM simulations. <i>International Journal of Solids and Structures</i> , 2007, 44, 6517-6534.	1.3	109
12	Crack closure and stress intensity factor measurements in nodular graphite cast iron using three-dimensional correlation of laboratory X-ray microtomography images. <i>Acta Materialia</i> , 2009, 57, 4090-4101.	3.8	109
13	An extended and integrated digital image correlation technique applied to the analysis of fractured samples. <i>European Journal of Computational Mechanics</i> , 2009, 18, 285-306.	0.6	109
14	A Numerical Approach for Arbitrary Cracks in a Fluid-Saturated Medium. <i>Archive of Applied Mechanics</i> , 2006, 75, 595-606.	1.2	106
15	Phase field modelling of anisotropic crack propagation. <i>European Journal of Mechanics, A/Solids</i> , 2017, 65, 279-288.	2.1	97
16	A fully integrated noise robust strategy for the identification of constitutive laws from digital images. <i>International Journal for Numerical Methods in Engineering</i> , 2010, 84, 631-660.	1.5	96
17	Data-based derivation of material response. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2018, 331, 184-196.	3.4	90
18	Mass lumping strategies for X-FEM explicit dynamics: Application to crack propagation. <i>International Journal for Numerical Methods in Engineering</i> , 2008, 74, 447-474.	1.5	88

#	ARTICLE	IF	CITATIONS
19	Strong and tough metal/ceramic micro-laminates. <i>Acta Materialia</i> , 2018, 144, 202-215.	3.8	73
20	Robust identification of elasto-plastic constitutive law parameters from digital images using 3D kinematics. <i>International Journal of Solids and Structures</i> , 2013, 50, 73-85.	1.3	72
21	Concentration-Gradient Prussian Blue Cathodes for Na-Ion Batteries. <i>ACS Energy Letters</i> , 2020, 5, 100-108.	8.8	71
22	Influence of closure on the 3D propagation of fatigue cracks in a nodular cast iron investigated by X-ray tomography and 3D volume correlation. <i>Acta Materialia</i> , 2010, 58, 2957-2967.	3.8	70
23	Analysis and Artifact Correction for Volume Correlation Measurements Using Tomographic Images from a Laboratory X-ray Source. <i>Experimental Mechanics</i> , 2011, 51, 959-970.	1.1	66
24	An open-source Abaqus implementation of the phase-field method to study the effect of plasticity on the instantaneous fracture toughness in dynamic crack propagation. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2020, 365, 113004.	3.4	66
25	Extended three-dimensional digital image correlation (X3D-DIC). <i>Comptes Rendus - Mecanique</i> , 2008, 336, 643-649.	2.1	65
26	A combined space-time extended finite element method. <i>International Journal for Numerical Methods in Engineering</i> , 2005, 64, 260-284.	1.5	62
27	X-FEM a good candidate for energy conservation in simulation of brittle dynamic crack propagation. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2008, 197, 309-318.	3.4	62
28	From pictures to extended finite elements: extended digital image correlation (X-DIC). <i>Comptes Rendus - Mecanique</i> , 2007, 335, 131-137.	2.1	59
29	Local/global non-intrusive crack propagation simulation using a multigrid X-FEM solver. <i>Computational Mechanics</i> , 2013, 52, 1381-1393.	2.2	59
30	In situ investigation of MgO nanocube deformation at room temperature. <i>Acta Materialia</i> , 2015, 86, 295-304.	3.8	58
31	A phase field method for modeling anodic dissolution induced stress corrosion crack propagation. <i>Corrosion Science</i> , 2018, 132, 146-160.	3.0	56
32	A stable numerical scheme for the finite element simulation of dynamic crack propagation with remeshing. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2004, 193, 4493-4510.	3.4	53
33	Noise-robust stress intensity factor determination from kinematic field measurements. <i>Engineering Fracture Mechanics</i> , 2008, 75, 3763-3781.	2.0	48
34	Digital volume correlation analyses of synchrotron tomographic images. <i>Journal of Strain Analysis for Engineering Design</i> , 2011, 46, 683-695.	1.0	48
35	On the Use of NURBS Functions for Displacement Derivatives Measurement by Digital Image Correlation. <i>Experimental Mechanics</i> , 2010, 50, 1099-1116.	1.1	46
36	DIC identification and X-FEM simulation of fatigue crack growth based on the Williamsâ€™ series. <i>International Journal of Solids and Structures</i> , 2015, 53, 38-47.	1.3	46

#	ARTICLE	IF	CITATIONS
37	Identification of a cohesive zone model from digital images at the micron-scale. Journal of the Mechanics and Physics of Solids, 2013, 61, 1407-1420.	2.3	44
38	A discrete model for the dynamic propagation of shear bands in a fluid-saturated medium. International Journal for Numerical and Analytical Methods in Geomechanics, 2007, 31, 347-370.	1.7	41
39	Damage law identification of a quasi brittle ceramic from a bending test using Digital Image Correlation. Journal of the European Ceramic Society, 2010, 30, 2715-2725.	2.8	39
40	Extraction of stress intensity factors for 3D small fatigue cracks using digital volume correlation and X-ray tomography. International Journal of Fatigue, 2015, 71, 3-10.	2.8	39
41	A phase field method for modeling stress corrosion crack propagation in a nickel base alloy. International Journal of Solids and Structures, 2017, 112, 65-82.	1.3	39
42	Energy conservation of atomistic/continuum coupling. International Journal for Numerical Methods in Engineering, 2009, 78, 1365-1386.	1.5	38
43	Hybrid analytical and extended finite element method (HAXÄ©FEM): A new enrichment procedure for cracked solids. International Journal for Numerical Methods in Engineering, 2010, 81, 269-285.	1.5	34
44	Mechanical behavior law of ceramic nanoparticles from transmission electron microscopy in situ nano-compression tests. Materials Letters, 2014, 119, 107-110.	1.3	34
45	DIC Challenge 2.0: Developing Images and Guidelines for Evaluating Accuracy and Resolution of 2D Analyses. Experimental Mechanics, 2022, 62, 639-654.	1.1	34
46	Experimental investigation of localized phenomena using digital image correlation. Philosophical Magazine, 2008, 88, 3339-3355.	0.7	31
47	Optimal and noise-robust extraction of Fracture Mechanics parameters from kinematic measurements. Engineering Fracture Mechanics, 2011, 78, 1827-1845.	2.0	31
48	Evaluation of multiple stress corrosion crack interactions by in-situ Digital Image Correlation. Corrosion Science, 2017, 128, 120-129.	3.0	31
49	Direct estimation of generalized stress intensity factors using a threeÄ©scale concurrent multigrid XÄ©FEM. International Journal for Numerical Methods in Engineering, 2011, 85, 1648-1666.	1.5	29
50	Three-dimensional Analysis of Fatigue Crack Propagation using X-Ray Tomography, Digital Volume Correlation and Extended Finite Element Simulations. Procedia IUTAM, 2012, 4, 151-158.	1.2	29
51	Automatic crack tip detection and stress intensity factors estimation of curved cracks from digital images. International Journal for Numerical Methods in Engineering, 2015, 103, 516-534.	1.5	29
52	A coupled molecular dynamics and extended finite element method for dynamic crack propagation. International Journal for Numerical Methods in Engineering, 2010, 81, 72-88.	1.5	26
53	Isogeometric analysis for strain field measurements. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 40-56.	3.4	26
54	Identification of damage and cracking behaviours based on energy dissipation mode analysis in a quasi-brittle material using digital image correlation. International Journal of Fracture, 2011, 171, 35-50.	1.1	25

#	ARTICLE	IF	CITATIONS
55	Identification of asymmetric constitutive laws at high temperature based on Digital Image Correlation. <i>Journal of the European Ceramic Society</i> , 2012, 32, 3949-3958.	2.8	25
56	A multiphysics model that can capture crack patterns in Si thin films based on their microstructure. <i>Journal of Power Sources</i> , 2018, 400, 383-391.	4.0	25
57	Curve and boundaries measurement using B-splines and virtual images. <i>Optics and Lasers in Engineering</i> , 2014, 52, 145-155.	2.0	23
58	Gradient-elasticity for honeycomb materials: Validation and identification from full-field measurements. <i>International Journal of Solids and Structures</i> , 2015, 72, 108-117.	1.3	23
59	Non-parametric material state field extraction from full field measurements. <i>Computational Mechanics</i> , 2019, 64, 501-509.	2.2	23
60	Effect of casting flow defects on the crack propagation in UHPFRC thin slabs by means of stereovision Digital Image Correlation. <i>Construction and Building Materials</i> , 2016, 129, 182-192.	3.2	21
61	Three-Dimensional Investigation of Free-Edge Effects in Laminate Composites Using X-ray Tomography and Digital Volume Correlation. <i>Experimental Mechanics</i> , 2015, 55, 301-311.	1.1	19
62	Structural elements made with highly flowable UHPFRC: Correlating computational fluid dynamics (CFD) predictions and non-destructive survey of fiber dispersion with failure modes. <i>Engineering Structures</i> , 2017, 133, 151-171.	2.6	19
63	Mixed-mode crack propagation using a Hybrid Analytical and eXtended Finite Element Method. <i>Comptes Rendus - Mecanique</i> , 2010, 338, 121-126.	2.1	18
64	Computational measurements of stress fields from digital images. <i>International Journal for Numerical Methods in Engineering</i> , 2018, 113, 1810-1826.	1.5	17
65	Direct observation of the displacement field and microcracking in a glass by means of X-ray tomography during in situ Vickers indentation experiment. <i>Acta Materialia</i> , 2019, 179, 424-433.	3.8	17
66	3D X-ray Microtomography Volume Correlation to Study Fatigue Crack Growth. <i>Advanced Engineering Materials</i> , 2011, 13, 186-193.	1.6	15
67	Controlling Stress Intensity Factors During a Fatigue Crack Propagation Using Digital Image Correlation and a Load Shedding Procedure. <i>Experimental Mechanics</i> , 2012, 52, 1021-1031.	1.1	15
68	Room temperature plasticity and phase transformation of nanometer-sized transition alumina nanoparticles under pressure. <i>Acta Materialia</i> , 2018, 150, 308-316.	3.8	15
69	Polydopamine coated Si nanoparticles allow for improved mechanical and electrochemical stability. <i>Electrochimica Acta</i> , 2021, 392, 138993.	2.6	15
70	3D displacement measurements using a single camera. <i>Optics and Lasers in Engineering</i> , 2014, 57, 20-27.	2.0	14
71	An efficient strategy for large scale 3D simulation of heterogeneous materials to predict effective thermal conductivity. <i>Computational Materials Science</i> , 2019, 166, 265-275.	1.4	14
72	A partition of unity based finite element method for level sets. <i>International Journal for Numerical Methods in Engineering</i> , 2008, 76, 1513-1527.	1.5	13

#	ARTICLE	IF	CITATIONS
73	Modeling of inter- and transgranular stress corrosion crack propagation in polycrystalline material by using phase field method. <i>Journal of the Mechanical Behavior of Materials</i> , 2017, 26, 181-191.	0.7	13
74	Three-dimensional Analysis of an In Situ Double-torsion Test by X-ray Computed Tomography and Digital Volume Correlation. <i>Experimental Mechanics</i> , 2013, 53, 1265-1275.	1.1	12
75	An efficient MultiGrid solver for the 3D simulation of composite materials. <i>Computational Materials Science</i> , 2016, 112, 230-237.	1.4	11
76	Identification of fracture models based on phase field for crack propagation in heterogeneous lattices in a context of non-separated scales. <i>Computational Mechanics</i> , 2019, 63, 1047-1068.	2.2	11
77	Capturing the stress evolution in electrode materials that undergo phase transformations during electrochemical cycling. <i>International Journal of Solids and Structures</i> , 2021, 224, 111032.	1.3	10
78	CARPIUC benchmark overview: crack advance, reorientation, propagation and initiation under complex loadings. <i>Advanced Modeling and Simulation in Engineering Sciences</i> , 2018, 5, .	0.7	9
79	Quasi-periodic lattices: Pattern matters too. <i>Scripta Materialia</i> , 2022, 209, 114378.	2.6	9
80	Methodology for a mechano-electrochemical evaluation of the coupling at the crack tip. Application of halide-induced Stress Corrosion Cracking of Zircaloy-4. <i>Corrosion Science</i> , 2015, 93, 39-47.	3.0	8
81	Multiscale analysis of brittle failure in heterogeneous materials. <i>Journal of the Mechanics and Physics of Solids</i> , 2021, 146, 104204.	2.3	8
82	Recent progress in digital image correlation: From measurement to mechanical identification. <i>Journal of Physics: Conference Series</i> , 2008, 135, 012002.	0.3	7
83	An efficient finite element based multigrid method for simulations of the mechanical behavior of heterogeneous materials using CT images. <i>Computational Mechanics</i> , 2020, 66, 1427-1441.	2.2	7
84	Unified phase field model to simulate both intergranular and transgranular failure in polycrystalline aggregates. <i>Finite Elements in Analysis and Design</i> , 2021, 194, 103555.	1.7	7
85	Anisotropic failure and size effects in periodic honeycomb materials: A gradient-elasticity approach. <i>Journal of the Mechanics and Physics of Solids</i> , 2017, 99, 35-49.	2.3	6
86	From dislocation nucleation to dislocation multiplication in ceramic nanoparticle. <i>Materials Research Letters</i> , 2021, 9, 278-283.	4.1	6
87	Metrological assessment of multi-sensor camera technology for spatially-resolved ultra-high-speed imaging of transient high strain-rate deformation processes. <i>Strain</i> , 2021, 57, e12381.	1.4	6
88	Dynamic Crack Propagation Using a Combined Molecular Dynamics/Extended Finite Element Approach. <i>International Journal for Multiscale Computational Engineering</i> , 2010, 8, 221-235.	0.8	6
89	Non-parametric stress field estimation for history-dependent materials: Application to ductile material exhibiting Pöschers localization bands. <i>Strain</i> , 2022, 58, .	1.4	6
90	Three-dimensional simulation of crack with curved front with direct estimation of stress intensity factors. <i>International Journal for Numerical Methods in Engineering</i> , 2015, 101, 635-652.	1.5	5

#	ARTICLE	IF	CITATIONS
91	Vibrational properties of quasi-periodic beam structures. Journal of Sound and Vibration, 2019, 442, 624-644.	2.1	5
92	Two-scale approaches for fracture in fluid-saturated porous media. Interaction and Multiscale Mechanics, 2008, 1, 83-101.	0.4	5
93	Experimental investigation of higher-order homogenization schemes under large strain. International Journal of Solids and Structures, 2016, 88-89, 263-273.	1.3	4
94	Improvement of the digital image correlation close to the borders of an object. Strain, 2020, 56, e12340.	1.4	4
95	Effect of microstructural length scales on crack propagation in elastic Cosserat media. Engineering Fracture Mechanics, 2022, 267, 108399.	2.0	4
96	Finite Strain Kinematics of Multi-scale Material by Digital Image Correlation. Experimental Mechanics, 2015, 55, 1641-1656.	1.1	3
97	On the failure resistance of quasi-periodic lattices. Scripta Materialia, 2018, 156, 23-26.	2.6	3
98	An innovative technique for real-time adjusting exposure time of silicon-based camera to get stable gray level images with temperature evolution. Mechanical Systems and Signal Processing, 2019, 122, 419-432.	4.4	3
99	2D X-FEM Simulation of Dynamic Brittle Crack Propagation. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2007, , 185-198.	0.1	3
100	Fatigue mechanisms of brazed Al-Mn alloys used in heat exchangers. Conference Proceedings of the Society for Experimental Mechanics, 2011, , 63-67.	0.3	2
101	Identification of the Stress Intensity Factor of Carbon Cathode by Digital Image Correlation. Minerals, Metals and Materials Series, 2017, , 1275-1280.	0.3	2
102	Measuring coarse grain deformation by digital image correlation. Strain, 2021, 57, e12378.	1.4	2
103	A Precis Of Two-Scale Approaches For Fracture In Porous Media. Solid Mechanics and Its Applications, 2009, , 149-171.	0.1	2
104	3D Analysis of a Fatigue Crack in Cast Iron Using Digital Volume Correlation of X-ray Tomographic Images. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 203-209.	0.3	2
105	An efficient matrix-free preconditioned conjugate gradient based multigrid method for phase field modeling of fracture in heterogeneous materials from 3D images. Computer Methods in Applied Mechanics and Engineering, 2022, 388, 114266.	3.4	2
106	Composite blade damaging under impact. European Physical Journal Special Topics, 2006, 134, 409-415.	0.2	1
107	Prise en compte de discontinuitÄ©s en espace et en temps par la mÄ©thode des elements finis Ä©tendus. European Journal of Computational Mechanics, 2007, 16, 827-843.	0.6	1
108	A Finite Element Method for Level Sets. , 2009, , 95-106.		1

#	ARTICLE	IF	CITATIONS
109	Multiscale digital image identification of heterogeneous elastic properties of softwoods. EPJ Web of Conferences, 2010, 6, 18002.	0.1	1
110	Influence of the Casting Microstructure upon the Tensile Behaviour in A319 Al-Si Alloy Investigated by X-Ray Tomography and Digital Volume Correlation. , 2014, , 73-78.		1
111	Étude mécanique d'un changement de phase allotropique à l'échelle microscopique. Materiaux Et Techniques, 2009, 97, 81-87.	0.3	1
112	A two-scale approach for fluid flow in fracturing porous media. , 2010, , 451-460.		1
113	A method for coupling atoms to continuum mechanics for capturing dynamic crack propagation. European Journal of Computational Mechanics, 2008, 17, 651-662.	0.6	0
114	A Multiscale Molecular Dynamics / Extended Finite Element Method for Dynamic Fracture. Advanced Structured Materials, 2010, , 211-237.	0.3	0
115	Development of a finite element enriched method adapted for the case of multiple cracked structure. European Journal of Computational Mechanics, 2010, 19, 217-228.	0.6	0
116	In situ 3D characterization of fatigue cracks displacement fields. Frattura Ed Integrita Strutturale, 2013, 7, 50-53.	0.5	0
117	Size and Environment Effect on the Room Temperature Plastic Deformation of Ceramic Nanoparticles. Microscopy and Microanalysis, 2016, 22, 48-49.	0.2	0
118	Multiple Cracks Interactions in Stress Corrosion Cracking: In Situ Observation by Digital Image Correlation and Phase Field Modeling. Minerals, Metals and Materials Series, 2018, , 161-174.	0.3	0
119	Multiple Cracks Interactions in Stress Corrosion Cracking: In Situ Observation by Digital Image Correlation and Phase Field Modeling. Minerals, Metals and Materials Series, 2019, , 161-174.	0.3	0
120	Measurement and Identification Techniques for Evolving Discontinuities. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2007, , 395-412.	0.1	0
121	A discrete model for the propagation of discontinuities in a fluid-saturated medium. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2007, , 323-342.	0.1	0
122	Measurement and Identification Techniques for Cracks: Application in Cyclic Fatigue. , 2007, , 179-180.		0