Andrey Jivkov

List of Publications by Year
in descending order

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109 papers	2,513 citations	279798 23 h-index	214800 47 g-index
112 all docs	112 docs citations	112 times ranked	2061 citing authors

#	Article	IF	Citations
1	Modelling soil desiccation cracking by peridynamics. Geotechnique, 2023, 73, 388-400.	4.0	9
2	Peridynamic modelling of clay erosion. Geotechnique, 2022, 72, 510-521.	4.0	5
3	A geometric formulation of linear elasticity based on discrete exterior calculus. International Journal of Solids and Structures, 2022, 236-237, 111345.	2.7	6
4	Large-Scale Modeling of Damage and Failure of Nuclear Graphite Moderated Reactor. Journal of Pressure Vessel Technology, Transactions of the ASME, 2022, 144, .	0.6	4
5	Image-Based vs. Parametric Modelling of Concrete Meso-Structures. Materials, 2022, 15, 704.	2.9	4
6	Analysis of heat transfer and water flow with phase change in saturated porous media by bond-based peridynamics. International Journal of Heat and Mass Transfer, 2022, 185, 122327.	4.8	13
7	Assessment of damage in hydraulic concrete by gray wolf optimizationâ€support vector machine model and hierarchical clustering analysis of acoustic emission. Structural Control and Health Monitoring, 2022, 29, .	4.0	7
8	Capturing the Temperature Dependence of Cleavage Fracture Toughness in the Ductile-to-Brittle Transition Regime in Ferritic Steels Using an Improved Engineering Local Approach. Journal of Pressure Vessel Technology, Transactions of the ASME, 2022, 144, .	0.6	0
9	Diffusion in multi-dimensional solids using Formanâ€™s combinatorial differential forms. Applied Mathematical Modelling, 2022, 110, 172-192.	4.2	10
10	Parallelized discrete exterior calculus for three-dimensional elliptic problems. Computer Physics Communications, 2022, 279, 108456.	7.5	2
11	A model for hydraulic conductivity of compacted bentonite â€“ inclusion of microstructure effects under confined wetting. Geotechnique, 2021, 71, 1071-1084.	4.0	21
12	Experimental and numerical study of the effects of solution concentration and temperature on concrete under external sulfate attack. Cement and Concrete Research, 2021, 139, 106284.	11.0	42
13	Triple junctions network as the key pattern for characterisation of grain structure evolution in metals. Materials and Design, 2021, 198, 109352.	7.0	5
14	Thermo-osmosis in hydrophilic nanochannels: mechanism and size effect. Nanoscale, 2021, 13, 1696-1716.	5.6	21
15	Incorporation of Obstacle Hardening into Local Approach to Cleavage Fracture to Predict Temperature Effects in the Ductile to Brittle Transition Regime. Materials, 2021, 14, 1224.	2.9	2
16	Investigation of tensile fracture of rubberized selfâ€compacting concrete by acoustic emission and digital image correlation. Structural Control and Health Monitoring, 2021, 28, e2744.	4.0	7
17	Interfacial transition zones in concrete meso-scale models â€“ Balancing physical realism and computational efficiency. Construction and Building Materials, 2021, 293, 123332.	7.2	11
18	On the Geometric Description of Nonlinear Elasticity via an Energy Approach Using Barycentric Coordinates. Mathematics, 2021, 9, 1689.	2.2	0

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19	On the Derivation of Multisymplectic Variational Integrators for Hyperbolic PDEs Using Exponential Functions. Applied Sciences (Switzerland), 2021, 11, 7837.	2.5	0
20	A guide to the finite and virtual element methods for elasticity. Applied Numerical Mathematics, 2021, 169, 351-395.	2.1	5
21	Thermo-osmosis in silica nanochannels. Japanese Geotechnical Society Special Publication, 2021, 9, 210-214.	0.2	2
22	Optimisation of rGO-enriched nanoceramics by combinatorial analysis. Materials and Design, 2021, 212, 110191.	7.0	9
23	Modelling the effects of water chemistry and flowrate on clay erosion. Engineering Geology, 2021, 294, 106409.	6.3	9
24	Evolution of triple junctionsâ€™ network during severe plastic deformation of copper alloys â€“ a discrete stochastic modelling. Philosophical Magazine, 2020, 100, 467-485.	1.6	7
25	Experimental and numerical investigation of mortar and ITZ parameters in meso-scale models of concrete. Theoretical and Applied Fracture Mechanics, 2020, 109, 102722.	4.7	48
26	Peridynamics modelling of coupled water flow and chemical transport in unsaturated porous media. Journal of Hydrology, 2020, 591, 125648.	5.4	27
27	On the effect of ITZ thickness in meso-scale models of concrete. Construction and Building Materials, 2020, 258, 119639.	7.2	80
28	Geometric modelling of elastic and elastic-plastic solids by separation of deformation energy and Prandtl operators. International Journal of Solids and Structures, 2020, 198, 136-148.	2.7	3
29	A 3D multi-phase meso-scale model for modelling coupling of damage and transport properties in concrete. Cement and Concrete Composites, 2020, 109, 103545.	10.7	62
30	A chemo-transport-damage model for concrete under external sulfate attack. Cement and Concrete Research, 2020, 132, 106048.	11.0	84
31	Observations of cleavage initiation in ferritic steel. Procedia Structural Integrity, 2020, 28, 1787-1794.	0.8	0
32	Experimental and numerical analyses of microstructure evolution of Cu-Cr-Zr alloys during severe plastic deformation. Materials Characterization, 2019, 156, 109849.	4.4	21
33	Effect of colloids on non-Fickian transport of strontium in sediments elucidated by continuous-time random walk analysis. Environmental Pollution, 2019, 252, 1491-1499.	7.5	6
34	Use of local approaches to calculate changes in cleavage fracture toughness due to pre-straining and constraint effects. Theoretical and Applied Fracture Mechanics, 2019, 104, 102380.	4.7	7
35	3D mesoscale modeling and fracture property study of rubberized self-compacting concrete based on uniaxial tension test. Theoretical and Applied Fracture Mechanics, 2019, 104, 102363.	4.7	17
36	A local approach incorporating the measured statistics of microcracks to assess the temperature dependence of cleavage fracture for a reactor pressure vessel steel. Procedia Structural Integrity, 2019, 18, 28-35.	0.8	4

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37	A mesoscale framework for analysis of corrosion induced damage of concrete. Construction and Building Materials, 2019, 216, 347-361.	7.2	11
38	Reliability of Algorithms Interpreting Topological and Geometric Properties of Porous Media for Pore Network Modelling. Transport in Porous Media, 2019, 128, 271-301.	2.6	53
39	Analysis of dynamic fracture and fragmentation of graphite bricks by combined XFEM and cohesive zone approach. International Journal of Pressure Vessels and Piping, 2019, 171, 117-124.	2.6	2
40	Parametric Study of Cohesive ITZ in Meso-scale Concrete Model. Procedia Structural Integrity, 2019, 23, 167-172.	0.8	6
41	Progress and challenges with local approaches to cleavage fracture. Procedia Structural Integrity, 2019, 23, 39-44.	0.8	3
42	Development of Geometric Formulation of Elasticity. Structural Integrity, 2019, , 262-267.	1.4	0
43	Analysis of Materials Systems Represented with Graphs. Structural Integrity, 2019, , 249-254.	1.4	0
44	Unsaturated Hydraulic Conductivity of Compacted Bentonite: Revisit of Microstructure Effects. Environmental Science and Engineering, 2019, , 544-550.	0.2	4
45	A Local Approach to Assess Temperature Effects on Fracture Toughness Incorporating the Measured Distribution of Microcracks. , 2019, , .		0
46	A mathematical model for elasticity using calculus on discrete manifolds. Mathematical Methods in the Applied Sciences, 2018, 41, 9057-9070.	2.3	10
47	Applicability of local approaches to assessment of cleavage fracture in complex constraint and load history cases. Procedia Structural Integrity, 2018, 13, 63-68.	0.8	3
48	Meso-scale modelling of mechanical behaviour and damage evolution in normal strength concrete. Procedia Structural Integrity, 2018, 13, 560-565.	0.8	17
49	A Local Approach to Assess Effects of Specimen Geometry on Cleavage Fracture Toughness in Reactor Pressure Vessel Steels. , 2018, , .		1
50	Anion diffusion in clay-rich sedimentary rocks â€“ A pore network modelling. Applied Clay Science, 2018, 161, 374-384.	5.2	14
51	Structural modelling of the cardiovascular system. Biomechanics and Modeling in Mechanobiology, 2018, 17, 1217-1242.	2.8	22
52	A mathematical model for plasticity and damage: A discrete calculus formulation. Journal of Computational and Applied Mathematics, 2017, 312, 27-38.	2.0	14
53	Dynamic fracture analysis by explicit solid dynamics and implicit crack propagation. International Journal of Solids and Structures, 2017, 110-111, 113-126.	2.7	14
54	A mechanistic model for long-term nuclear waste glass dissolution integrating chemical affinity and interfacial diffusion barrier. Journal of Nuclear Materials, 2017, 486, 70-85.	2.7	23

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55	Non-Fickian dispersive transport of strontium in laboratory-scale columns: Modelling and evaluation. Journal of Hydrology, 2017, 549, 1-11.	5.4	16
56	Dynamic fracture effects on remote stress amplification in AGR graphite bricks. Nuclear Engineering and Design, 2017, 323, 280-289.	1.7	5
57	Evolution of Pore-Scale Morphology of Oil Shale During Pyrolysis: A Quantitative Analysis. Transport in Porous Media, 2017, 119, 143-162.	2.6	27
58	Two-parameter fracture characterization of a welded pipe in the presence of residual stresses. Procedia Structural Integrity, 2016, 2, 777-784.	0.8	2
59	A meso-scale approach to modelling stable dynamic crack propagation in glass under rate-dependent loading. Procedia Structural Integrity, 2016, 2, 381-388.	0.8	2
60	Review of pore network modelling of porous media: Experimental characterisations, network constructions and applications to reactive transport. Journal of Contaminant Hydrology, 2016, 192, 101-117.	3.3	380
61	Multi-scale modelling of nuclear graphite tensile strength using the site-bond lattice model. Carbon, 2016, 100, 273-282.	10.3	12
62	Computational technology for analysis of 3D meso-structure effects on damage and failure of concrete. International Journal of Solids and Structures, 2016, 80, 310-333.	2.7	168
63	Micromechanical modelling of deformation and fracture of hydrating cement paste using X-ray computed tomography characterisation. Composites Part B: Engineering, 2016, 88, 64-72.	12.0	63
64	Modelling reactive diffusion in clays with two-phase-informed pore networks. Applied Clay Science, 2016, 119, 222-228.	5.2	11
65	Analysis of pore structure effects on diffusive transport in Opalinus clay via pore network models. Mineralogical Magazine, 2015, 79, 1369-1377.	1.4	9
66	Combined Numerical-Statistical Analyses of Damage and Failure of 2D and 3D Mesoscale Heterogeneous Concrete. Mathematical Problems in Engineering, 2015, 2015, 1-12.	1.1	4
67	Monte Carlo simulations of mesoscale fracture of concrete with random aggregates and pores: a size effect study. Construction and Building Materials, 2015, 80, 262-272.	7.2	144
68	Measurement and modelling of reactive transport in geological barriers for nuclear waste containment. Physical Chemistry Chemical Physics, 2015, 17, 30577-30589.	2.8	18
69	Monte Carlo simulations of mesoscale fracture modelling of concrete with random aggregates and pores. Construction and Building Materials, 2015, 75, 35-45.	7.2	243
70	A Network Model for Diffusion in Media with Partially Resolvable Pore Space Characteristics. Transport in Porous Media, 2014, 105, 83-104.	2.6	17
71	Discrete Lattice Model of Quasi-Brittle Fracture in Porous Graphite. Materials Performance and Characterization, 2014, 3, 414-428.	0.3	4
72	A Lattice-spring Model for Damage Evolution in Cement Paste. , 2014, 3, 1854-1859.		4

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73	Microstructure-informed modelling of damage evolution in cement paste. Construction and Building Materials, 2014, 66, 731-742.	7.2	48
74	Engineering Criterion for Rupture of Brittle Particles in a Ductile Matrix Including Particle Size and Stress Triaxiality Effects. , 2014, 3, 1922-1927.		0
75	Fracture Energy of Graphite from Microstructure-informed Lattice Model. , 2014, 3, 1848-1853.		7
76	Site-bond Modelling of Structure-failure Relations in Quasi-brittle Media. , 2014, 3, 1872-1877.		2
77	Discrete modelling of contaminant diffusion in porous media with sorption. Microporous and Mesoporous Materials, 2014, 185, 51-60.	4.4	26
78	A novel particle failure criterion for cleavage fracture modelling allowing measured brittle particle distributions. Engineering Fracture Mechanics, 2014, 121-122, 98-115.	4.3	24
79	Structure of micro-crack population and damage evolution in quasi-brittle media. Theoretical and Applied Fracture Mechanics, 2014, 70, 1-9.	4.7	16
80	Pore-scale modelling of 3D moisture distribution and critical saturation in cementitious materials. Construction and Building Materials, 2014, 64, 222-230.	7.2	26
81	Meso-scale site-bond model for elasticity: theory and calibration. Materials Research Innovations, 2014, 18, S2-982-S2-986.	2.3	7
82	A novel architecture for pore network modelling with applications to permeability of porous media. Journal of Hydrology, 2013, 486, 246-258.	5.4	66
83	Pore space and brittle damage evolution in concrete. Engineering Fracture Mechanics, 2013, 110, 378-395.	4.3	48
84	Cleavage Fracture Modelling for RPV Steels: Discrete Model for Collective Behaviour of Micro-Cracks. , 2013, , .		1
85	Predictions of Fracture Toughness for Weld Material When Adopting a Novel Particle Failure Criterion and a Measured Experimental Particle Distribution. , 2013, , .		1
86	Novel Lattice Models for Porous Media. Materials Research Society Symposia Proceedings, 2012, 1475, 565.	0.1	1
87	Site-bond modelling of porous quasi-brittle media. Mineralogical Magazine, 2012, 76, 2969-2974.	1.4	15
88	Elastic behaviour of a regular lattice for meso-scale modelling of solids. International Journal of Solids and Structures, 2012, 49, 3089-3099.	2.7	51
89	Assessment of Local Approach Methods for Predicting End-of-Life Toughness of RPV Steels. , 2011, , .		7
90	Mesoscale Mechanical Model for Intergranular Stress Corrosion Cracking and Implications for Microstructure Engineering. Journal of Pressure Vessel Technology, Transactions of the ASME, 2008, 130, .	0.6	6

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91	Local Approach Studies of the Effect of Load History on Ductile Fracture. , 2008, , .		0
92	Modelling Intergranular Stress Corrosion Cracking in Simulated Three-Dimensional Microstructures. Key Engineering Materials, 2007, 345-346, 1019-1022.	0.4	1
93	Rates of intergranular environment assisted cracking in three-dimensional model microstructures. Theoretical and Applied Fracture Mechanics, 2007, 48, 187-202.	4.7	25
94	On dissolution driven crack growth. International Journal of Solids and Structures, 2007, 44, 1880-1890.	2.7	13
95	A three-dimensional computational model for intergranular cracking. Computational Materials Science, 2006, 38, 442-453.	3.0	44
96	A two-dimensional mesoscale model for intergranular stress corrosion crack propagationâ˜†. Acta Materialia, 2006, 54, 3493-3501.	7.9	35
97	Three dimensional observations and modelling of intergranular stress corrosion cracking in austenitic stainless steel. Journal of Nuclear Materials, 2006, 352, 62-74.	2.7	108
98	Meso-Scale Mechanical Model for Intergranular Stress Corrosion Cracking and Implications for Microstructure Engineering. , 2006, , 591.		0
99	Grain boundary control for improved intergranular stress corrosion cracking resistance in austenitic stainless steels: new approach. Energy Materials, 2006, 1, 98-102.	0.1	5
100	Corrosion Cracks Nucleation By Deformation-Induced Passivity Breakdown. Journal of the Mechanical Behavior of Materials, 2005, 16, 177-194.	1.8	0
101	Fatigue corrosion crack extension across the interface of an elastic bi-material. Engineering Fracture Mechanics, 2004, 71, 1119-1133.	4.3	1
102	Strain-induced passivity breakdown in corrosion crack initiation. Theoretical and Applied Fracture Mechanics, 2004, 42, 43-52.	4.7	14
103	A model for graded materials with application to cracks. International Journal of Fracture, 2003, 124, 93-105.	2.2	2
104	Evolution of fatigue crack corrosion from surface irregularities. Theoretical and Applied Fracture Mechanics, 2003, 40, 45-54.	4.7	8
105	Strain-driven corrosion crack growth. Engineering Fracture Mechanics, 2002, 69, 2095-2111.	4.3	14
106	A Discrete Model for Diffusion-Induced Grain Boundary Deterioration. Key Engineering Materials, 0, 592-593, 757-760.	0.4	0
107	Lattice-Spring Modeling of Graphite Accounting for Pore Size Distribution. Key Engineering Materials, 0, 592-593, 92-95.	0.4	2
108	Effective Properties of Pore Network Elements Derived from Reactive Transport in Individual Pores. Defect and Diffusion Forum, 0, 369, 125-130.	0.4	1

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109	Discussions on nomenclatures related to bentonite. Geotechnique, 0, , 1-9.	4.0	1