

Jean Francois Molinari

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

140
papers

4,962
citations

41
h-index

65
g-index

144
ext. papers

5,609
ext. citations

4.5
avg, IF

6.18
L-index

#	Paper	IF	Citations
140	cRacklet: a spectral boundary integral method library for interfacial rupture simulation. <i>Journal of Open Source Software</i> , 2022 , 7, 3724	5.2	0
139	Experimental and Numerical Study of the Effect of Surface Patterning on the Frictional Properties of Polymer Surfaces. <i>Journal of Tribology</i> , 2022 , 144,	1.8	2
138	An Optimized Material Removal Process 2022 , 355-366		
137	Adhesive wear with a coarse-grained discrete element model. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2022 , 397, 115124	5.7	0
136	Earthquake Nucleation Along Faults With Heterogeneous Weakening Rate. <i>Geophysical Research Letters</i> , 2021 , 48, e2021GL094901	4.9	5
135	Explosive fragmentation of Prince Rupert's drops leads to well-defined fragment sizes. <i>Nature Communications</i> , 2021 , 12, 2521	17.4	3
134	Creation and evolution of roughness on silica under unlubricated wear. <i>Wear</i> , 2021 , 472-473, 203648	3.5	3
133	A Simple Mechanistic Model for Friction of Rough Partially Lubricated Surfaces. <i>Tribology Letters</i> , 2021 , 69, 1	2.8	
132	Adhesive Wear Regimes on Rough Surfaces and Interaction of Micro-contacts. <i>Tribology Letters</i> , 2021 , 69, 1	2.8	2
131	A parameter-free mechanistic model of the adhesive wear process of rough surfaces in sliding contact. <i>Journal of the Mechanics and Physics of Solids</i> , 2021 , 147, 104238	5	5
130	Onset of sliding across scales: How the contact topography impacts frictional strength. <i>Physical Review Materials</i> , 2021 , 5,	3.2	1
129	Velocity-driven frictional sliding: Coarsening and steady-state pulses. <i>Journal of the Mechanics and Physics of Solids</i> , 2021 , 158, 104607	5	3
128	Stick-slip phenomena and Schallamach waves captured using reversible cohesive elements. <i>Journal of the Mechanics and Physics of Solids</i> , 2021 , 155, 104528	5	1
127	Crack nucleation in the adhesive wear of an elastic-plastic half-space. <i>Journal of the Mechanics and Physics of Solids</i> , 2020 , 145, 104100	5	6
126	Role of interfacial adhesion on minimum wear particle size and roughness evolution. <i>Physical Review E</i> , 2020 , 102, 043001	2.4	6
125	Explicit dynamic approach for unbounded domains in frictional contact with Rate and State laws. <i>Finite Elements in Analysis and Design</i> , 2020 , 174, 103402	2.2	2
124	Finite element modeling of dynamic frictional rupture with rate and state friction. <i>Journal of the Mechanics and Physics of Solids</i> , 2020 , 141, 103967	5	6

123	Tamaas: a library for elastic-plastic contact of periodic rough surfaces. <i>Journal of Open Source Software</i> , 2020 , 5, 2121	5.2	5
122	Adhesive wear and interaction of tangentially loaded micro-contacts. <i>International Journal of Solids and Structures</i> , 2020 , 188-189, 261-268	3.1	11
121	The emergence of crack-like behavior of frictional rupture: Edge singularity and energy balance. <i>Earth and Planetary Science Letters</i> , 2020 , 531, 115978	5.3	18
120	Variational phase-field continuum model uncovers adhesive wear mechanisms in asperity junctions. <i>Journal of the Mechanics and Physics of Solids</i> , 2020 , 145, 104130	5	4
119	A mechanistic model for the growth of cylindrical debris particles in the presence of adhesion. <i>International Journal of Solids and Structures</i> , 2020 , 203, 1-16	3.1	0
118	A Fourier-accelerated volume integral method for elastoplastic contact. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2019 , 351, 951-976	5.7	16
117	Emergence of self-affine surfaces during adhesive wear. <i>Nature Communications</i> , 2019 , 10, 1116	17.4	24
116	Adhesive wear mechanisms in the presence of weak interfaces: Insights from an amorphous model system. <i>Physical Review Materials</i> , 2019 , 3,	3.2	9
115	Emergence of Cracklike Behavior of Frictional Rupture: The Origin of Stress Drops. <i>Physical Review X</i> , 2019 , 9,	9.1	5
114	A mechanistic understanding of the wear coefficient: From single to multiple asperities contact. <i>Journal of the Mechanics and Physics of Solids</i> , 2018 , 114, 172-184	5	40
113	The coupled atomistic/discrete-dislocation method in 3d. Part III: Dynamics of hybrid dislocations. <i>Journal of the Mechanics and Physics of Solids</i> , 2018 , 118, 1-14	5	19
112	Asperity-Level Origins of Transition from Mild to Severe Wear. <i>Physical Review Letters</i> , 2018 , 120, 186105	5.4	39
111	Influence of heterogeneities on crack propagation. <i>International Journal of Fracture</i> , 2018 , 209, 77-90	2.3	9
110	Unstable Slip Pulses and Earthquake Nucleation as a Nonequilibrium First-Order Phase Transition. <i>Physical Review Letters</i> , 2018 , 121, 234302	7.4	15
109	Supershear bursts in the propagation of a tensile crack in linear elastic material. <i>Physical Review E</i> , 2018 , 98,	2.4	7
108	Adhesive wear mechanisms uncovered by atomistic simulations. <i>Friction</i> , 2018 , 6, 245-259	5.6	26
107	HPC simulations of alkali-silica reaction-induced damage: Influence of alkali-silica gel properties. <i>Cement and Concrete Research</i> , 2018 , 109, 90-102	10.3	8
106	The Coupled Atomistic/Discrete-Dislocation method in 3d part I: Concept and algorithms. <i>Journal of the Mechanics and Physics of Solids</i> , 2018 , 118, 152-171	5	26

105	3D dynamic fragmentation with parallel dynamic insertion of cohesive elements. <i>International Journal for Numerical Methods in Engineering</i> , 2017 , 109, 1655-1678	2.4	14
104	Micro-mechanical finite element modeling of diagonal compression test for historical stone masonry structure. <i>International Journal of Solids and Structures</i> , 2017 , 112, 122-132	3.1	22
103	Normal adhesive contact on rough surfaces: efficient algorithm for FFT-based BEM resolution. <i>Computational Mechanics</i> , 2017 , 60, 69-81	4	42
102	On the accurate computation of the true contact-area in mechanical contact of random rough surfaces. <i>Tribology International</i> , 2017 , 114, 161-171	4.9	31
101	Microbranching instability in phase-field modelling of dynamic brittle fracture. <i>Applied Physics Letters</i> , 2017 , 110, 151903	3.4	25
100	A mesoscale fracture model for concrete. <i>Cement and Concrete Research</i> , 2017 , 97, 84-94	10.3	67
99	Mobility law of dislocations with several character angles and temperatures in FCC aluminum. <i>International Journal of Plasticity</i> , 2017 , 90, 66-75	7.6	56
98	Interplay between Process Zone and Material Heterogeneities for Dynamic Cracks. <i>Physical Review Letters</i> , 2017 , 119, 144101	7.4	12
97	The role of the roughness spectral breadth in elastic contact of rough surfaces. <i>Journal of the Mechanics and Physics of Solids</i> , 2017 , 107, 469-493	5	29
96	Damage cluster distributions in numerical concrete at the mesoscale. <i>Physical Review E</i> , 2017 , 95, 043002	2.4	1
95	On the debris-level origins of adhesive wear. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, 7935-7940	11.5	51
94	Dynamic crack propagation with a variational phase-field model: limiting speed, crack branching and velocity-toughening mechanisms. <i>International Journal of Fracture</i> , 2017 , 204, 79-100	2.3	65
93	Avalanches in dry and saturated disordered media at fracture in shear and mixed mode scenarios. <i>Mechanics Research Communications</i> , 2017 , 80, 58-68	2.2	9
92	Avalanches in dry and saturated disordered media at fracture. <i>Physical Review E</i> , 2016 , 93, 043002	2.4	21
91	Critical length scale controls adhesive wear mechanisms. <i>Nature Communications</i> , 2016 , 7, 11816	17.4	124
90	Length scale of interface heterogeneities selects propagation mechanism of frictional slip fronts. <i>Journal of the Mechanics and Physics of Solids</i> , 2016 , 88, 23-34	5	8
89	Properties of the shear stress peak radiated ahead of rapidly accelerating rupture fronts that mediate frictional slip. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016 , 113, 542-7	11.5	36
88	Effects of residual stresses on the tensile fatigue behavior of concrete. <i>Cement and Concrete Research</i> , 2016 , 89, 206-219	10.3	11

87	Linear Elastic Fracture Mechanics Predicts the Propagation Distance of Frictional Slip. <i>Tribology Letters</i> , 2015 , 57, 1	2.8	54
86	Dynamic stability of displacement-based atomistic/continuum coupling methods. <i>Journal of the Mechanics and Physics of Solids</i> , 2015 , 80, 103-120	5	7
85	Toward a 3D coupled atomistic and discrete dislocation dynamics simulation: dislocation core structures and Peierls stresses with several character angles in FCC aluminum. <i>Advanced Modeling and Simulation in Engineering Sciences</i> , 2015 , 2,	2.7	25
84	MD/FE Multiscale Modeling of Contact. <i>Nanoscience and Technology</i> , 2015 , 289-312	0.6	3
83	The role of viscoelasticity on heterogeneous stress fields at frictional interfaces. <i>Mechanics of Materials</i> , 2015 , 80, 276-287	3.3	10
82	From infinitesimal to full contact between rough surfaces: Evolution of the contact area. <i>International Journal of Solids and Structures</i> , 2015 , 52, 83-102	3.1	148
81	A new formulation for imposing Dirichlet boundary conditions on non-matching meshes. <i>International Journal for Numerical Methods in Engineering</i> , 2015 , 103, 430-444	2.4	18
80	Toward Demystifying the Mohs Hardness Scale. <i>Journal of the American Ceramic Society</i> , 2015 , 98, 2681-2688	3.0	3
79	A non-local continuum damage approach to model dynamic crack branching. <i>International Journal for Numerical Methods in Engineering</i> , 2015 , 101, 933-949	2.4	32
78	Implementation of a parallel finite-element library: Test case on a non-local continuum damage model. <i>Finite Elements in Analysis and Design</i> , 2015 , 100, 41-46	2.2	22
77	Influence of internal impacts between fragments in dynamic brittle tensile fragmentation. <i>International Journal of Solids and Structures</i> , 2015 , 58, 247-256	3.1	7
76	Dynamic crack propagation in a heterogeneous ceramic microstructure, insights from a cohesive model. <i>Acta Materialia</i> , 2015 , 88, 136-146	8.4	20
75	Plastic activity in nanoscratch molecular dynamics simulations of pure aluminium. <i>International Journal of Plasticity</i> , 2014 , 53, 90-106	7.6	41
74	A concurrent atomistic and continuum coupling method with applications to thermo-mechanical problems. <i>International Journal for Numerical Methods in Engineering</i> , 2014 , 97, 707-738	2.4	7
73	The existence of a critical length scale in regularised friction. <i>Journal of the Mechanics and Physics of Solids</i> , 2014 , 63, 40-50	5	14
72	The Contact of Elastic Regular Wavy Surfaces Revisited. <i>Tribology Letters</i> , 2014 , 56, 171-183	2.8	32
71	Impact of internal crystalline boundaries on lattice thermal conductivity: Importance of boundary structure and spacing. <i>Applied Physics Letters</i> , 2014 , 105, 194102	3.4	9
70	A study of frictional contact in dynamic fracture along bimaterial interfaces. <i>International Journal of Fracture</i> , 2014 , 189, 149-162	2.3	11

69	A hierarchical detection framework for computational contact mechanics. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2014 , 268, 574-588	5.7	5
68	On the influence of transgranular and intergranular failure mechanisms during dynamic loading of silicon nitride. <i>Acta Materialia</i> , 2014 , 67, 239-251	8.4	12
67	A cohesive element model for mixed mode loading with frictional contact capability. <i>International Journal for Numerical Methods in Engineering</i> , 2013 , 93, 510-526	2.4	61
66	A molecular dynamics and finite elements study of nanoscale thermal contact conductance. <i>International Journal of Heat and Mass Transfer</i> , 2013 , 59, 384-392	4.9	11
65	Insights into the thermo-mechanics of orthogonal nanometric machining. <i>Computational Materials Science</i> , 2013 , 72, 116-126	3.2	27
64	A constrained-optimization methodology for the detection phase in contact mechanics simulations. <i>International Journal for Numerical Methods in Engineering</i> , 2013 , 96, n/a-n/a	2.4	2
63	Direct visualization of single ions in the Stern layer of calcite. <i>Langmuir</i> , 2013 , 29, 2207-16	4	133
62	Spatial filters for bridging molecular dynamics with finite elements at finite temperatures. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2013 , 253, 28-38	5.7	14
61	Relations between roughness, temperature and dry sliding friction at the atomic scale. <i>Tribology International</i> , 2013 , 59, 222-229	4.9	45
60	Survival of heterogeneous stress distributions created by precursory slip at frictional interfaces. <i>Physical Review Letters</i> , 2013 , 111, 164302	7.4	30
59	Numerical determination of the tensile response and the dissipated fracture energy of concrete: role of the mesostructure and influence of the loading rate. <i>International Journal for Numerical and Analytical Methods in Geomechanics</i> , 2013 , 37, 3112-3130	4	24
58	Normal contact between rough surfaces by the Discrete Element Method. <i>Tribology International</i> , 2012 , 47, 1-8	4.9	27
57	Molecular dynamics nano-scratching of aluminium: a novel quantitative energy-based analysis method. <i>Procedia IUTAM</i> , 2012 , 3, 192-204		8
56	A meso-mechanical model for concrete under dynamic tensile and compressive loading. <i>International Journal of Fracture</i> , 2012 , 178, 179-194	2.3	32
55	On the Propagation of Slip Fronts at Frictional Interfaces. <i>Tribology Letters</i> , 2012 , 48, 27-32	2.8	44
54	The effect of loading on surface roughness at the atomistic level. <i>Computational Mechanics</i> , 2012 , 50, 273-283	4	27
53	Dynamic fragmentation of a brittle plate under biaxial loading: strength or toughness controlled?. <i>International Journal of Fracture</i> , 2012 , 174, 203-215	2.3	18
52	A finite temperature bridging domain method for MD-FE coupling and application to a contact problem. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2012 , 205-208, 204-212	5.7	30

51	Contact between representative rough surfaces. <i>Physical Review E</i> , 2012 , 86, 035601	2.4	41
50	Friction at the tool-chip interface during orthogonal nanometric machining. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2012 , 20, 055007	2	16
49	Optimum energy on the fragmentation of kidney stones by direct impact. <i>Engineering Computations</i> , 2011 , 28, 747-764	1.4	1
48	Influence of the meso-structure in dynamic fracture simulation of concrete under tensile loading. <i>Cement and Concrete Research</i> , 2011 , 41, 1130-1142	10.3	89
47	How the obscuration-zone hypothesis affects fragmentation: Illustration with the cohesive-element method. <i>International Journal of Fracture</i> , 2011 , 171, 125-137	2.3	3
46	Dry Sliding Contact Between Rough Surfaces at the Atomistic Scale. <i>Tribology Letters</i> , 2011 , 44, 279-285	2.8	42
45	Predicting variability in the dynamic failure strength of brittle materials considering pre-existing flaws. <i>Journal of the Mechanics and Physics of Solids</i> , 2011 , 59, 297-319	5	51
44	The autocorrelation function for island areas on self-affine surfaces. <i>Journal of Physics Condensed Matter</i> , 2011 , 23, 215004	1.8	18
43	Dynamic fragmentation of a ring: predictable fragment mass distributions. <i>Physical Review E</i> , 2010 , 82, 066105	2.4	14
42	Finite element analysis of normal pressure hydrocephalus: influence of CSF content and anisotropy in permeability. <i>Applied Bionics and Biomechanics</i> , 2010 , 7, 187-197	1.6	4
41	Sliding of rough surfaces and energy dissipation with a 3D multiscale approach. <i>International Journal for Numerical Methods in Engineering</i> , 2010 , 83, 1255-1271	2.4	16
40	Dynamic fragmentation of ceramics, signature of defects and scaling of fragment sizes. <i>Journal of the Mechanics and Physics of Solids</i> , 2010 , 58, 12-26	5	78
39	Finite element simulations of kidney stones fragmentation by direct impact: Tool geometry and multiple impacts. <i>International Journal of Engineering Science</i> , 2010 , 48, 253-264	5.7	5
38	Contact mechanics at the nanoscale, a 3D multiscale approach. <i>International Journal for Numerical Methods in Engineering</i> , 2009 , 79, 1041-1067	2.4	27
37	Deformation by grain boundary hinge-like behavior. <i>Materials Letters</i> , 2008 , 62, 57-60	3.3	6
36	Effect of normal loading on grain boundary migration and sliding in copper. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2008 , 16, 075007	2	12
35	A new methodology for ranking scientific institutions. <i>Scientometrics</i> , 2008 , 75, 163-174	3	87
34	Mathematical aspects of a new criterion for ranking scientific institutions based on the h-index. <i>Scientometrics</i> , 2008 , 75, 339-356	3	40

33	Computational micromechanics of dynamic compressive loading of a brittle polycrystalline material using a distribution of grain boundary properties. <i>Journal of the Mechanics and Physics of Solids</i> , 2008 , 56, 2618-2641	5	47
32	A statistical investigation of the effects of grain boundary properties on transgranular fracture. <i>Acta Materialia</i> , 2008 , 56, 4739-4749	8.4	49
31	The cohesive element approach to dynamic fragmentation: the question of energy convergence. <i>International Journal for Numerical Methods in Engineering</i> , 2007 , 69, 484-503	2.4	69
30	Size and microstructure effects on the mechanical behavior of FCC bicrystals by quasicontinuum method. <i>Thin Solid Films</i> , 2007 , 515, 3158-3163	2.2	13
29	Atomistic based continuum investigation of plastic deformation in nanocrystalline copper. <i>International Journal of Plasticity</i> , 2006 , 22, 754-774	7.6	105
28	Yield criteria and strain-rate behavior of Zr57.4Cu16.4Ni8.2Ta8Al10 metallic-glass-matrix composites. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2006 , 37, 3251-3258	2.3	24
27	A semi-discrete and non-local crystal plasticity model for nanocrystalline metals. <i>Scripta Materialia</i> , 2006 , 54, 1397-1402	5.6	10
26	Increased strain rate sensitivity due to stress-coupled grain growth in nanocrystalline Al. <i>Scripta Materialia</i> , 2006 , 55, 649-652	5.6	104
25	Numerical Convergence of the Cohesive Element Approach in Dynamic Fragmentation Simulations. <i>AIP Conference Proceedings</i> , 2006 ,	0	2
24	Characteristic fragment size distributions in dynamic fragmentation. <i>Applied Physics Letters</i> , 2006 , 88, 261918	3.4	33
23	Analysis of the brittle fragmentation of an expanding ring. <i>Computational Materials Science</i> , 2006 , 37, 74-85	3.2	43
22	Micromechanical finite element modeling of compressive fracture in confined alumina ceramic. <i>Acta Materialia</i> , 2006 , 54, 5135-5145	8.4	62
21	An elastic-visco-plastic analysis of ductile expanding ring. <i>International Journal of Impact Engineering</i> , 2006 , 33, 880-891	4	56
20	Effects of material properties on the fragmentation of brittle materials. <i>International Journal of Fracture</i> , 2006 , 139, 169-196	2.3	58
19	Multiscale modeling of two-dimensional contacts. <i>Physical Review E</i> , 2006 , 74, 046710	2.4	92
18	Finite element modeling of elasto-plastic contact between rough surfaces. <i>Journal of the Mechanics and Physics of Solids</i> , 2005 , 53, 2385-2409	5	250
17	A rate-dependent cohesive model for simulating dynamic crack propagation in brittle materials. <i>Engineering Fracture Mechanics</i> , 2005 , 72, 1383-1410	4.2	149
16	Micromechanics of deformation of metallic-glass-matrix composites from in situ synchrotron strain measurements and finite element modeling. <i>Acta Materialia</i> , 2005 , 53, 1883-1893	8.4	79

15	Mechanical behavior of tilt grain boundaries in nanoscale Cu and Al: A quasicontinuum study. <i>Acta Materialia</i> , 2005 , 53, 1931-1944	8.4	191
14	A cohesive model based fragmentation analysis: effects of strain rate and initial defects distribution. <i>International Journal of Solids and Structures</i> , 2005 , 42, 5181-5207	3.1	78
13	On the rate-dependency of dynamic tensile strength of a model ceramic system. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2005 , 194, 1693-1709	5.7	14
12	Incidence of atom shuffling on the shear and decohesion behavior of a symmetric tilt grain boundary in copper. <i>Scripta Materialia</i> , 2004 , 50, 1283-1288	5.6	74
11	Dynamic crack propagation with cohesive elements: a methodology to address mesh dependency. <i>International Journal for Numerical Methods in Engineering</i> , 2004 , 59, 1-24	2.4	156
10	Three-dimensional numerical simulations of dynamic fracture in silicon carbide reinforced aluminum. <i>Engineering Fracture Mechanics</i> , 2004 , 71, 1357-1378	4.2	23
9	Shear bands in dense metallic granular materials. <i>Journal of the Mechanics and Physics of Solids</i> , 2004 , 52, 499-531	5	48
8	Stochastic fracture of ceramics under dynamic tensile loading. <i>International Journal of Solids and Structures</i> , 2004 , 41, 6573-6596	3.1	74
7	Finite-element analysis of contact between elastic self-affine surfaces. <i>Physical Review E</i> , 2004 , 70, 026117	1.4	325
6	Three-dimensional adaptive meshing by subdivision and edge-collapse in finite-deformation dynamic plasticity problems with application to adiabatic shear banding. <i>International Journal for Numerical Methods in Engineering</i> , 2002 , 53, 1101-1126	2.4	31
5	Tetrahedral composite finite elements. <i>International Journal for Numerical Methods in Engineering</i> , 2002 , 53, 1337-1351	2.4	44
4	A study of solid-particle erosion of metallic targets. <i>International Journal of Impact Engineering</i> , 2002 , 27, 347-358	4	51
3	Finite element simulation of shaped charges. <i>Finite Elements in Analysis and Design</i> , 2002 , 38, 921-936	2.2	38
2	Finite-element modeling of dry sliding wear in metals. <i>Engineering Computations</i> , 2001 , 18, 592-610	1.4	56
1	Numerical Investigation of Dynamic Compressive Loading		417-423 1