

Jean Francois Molinari

List of Publications by Citations

Source: <https://exaly.com/author-pdf/3222875/jean-francois-molinari-publications-by-citations.pdf>

Version: 2024-04-28

This document has been generated based on the publications and citations recorded by exaly.com. For the latest version of this publication list, visit the link given above.

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	Finite-element analysis of contact between elastic self-affine surfaces. <i>Physical Review E</i> , 2004 , 70, 026117	11.7	325
139	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
138	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
137	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
136	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
135	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
134	Direct visualization of single ions in the Stern layer of calcite. <i>Langmuir</i> , 2013 , 29, 2207-16	4	133
133	Critical length scale controls adhesive wear mechanisms. <i>Nature Communications</i> , 2016 , 7, 11816	17.4	124
132	Atomistic based continuum investigation of plastic deformation in nanocrystalline copper. <i>International Journal of Plasticity</i> , 2006 , 22, 754-774	7.6	105
131	Increased strain rate sensitivity due to stress-coupled grain growth in nanocrystalline Al. <i>Scripta Materialia</i> , 2006 , 55, 649-652	5.6	104
130	Multiscale modeling of two-dimensional contacts. <i>Physical Review E</i> , 2006 , 74, 046710	2.4	92
129	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
128	A new methodology for ranking scientific institutions. <i>Scientometrics</i> , 2008 , 75, 163-174	3	87
127	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
126	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
125	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
124	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

123	Stochastic fracture of ceramics under dynamic tensile loading. <i>International Journal of Solids and Structures</i> , 2004 , 41, 6573-6596	3.1	74
122	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
121	A mesoscale fracture model for concrete. <i>Cement and Concrete Research</i> , 2017 , 97, 84-94	10.3	67
120	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
119	Micromechanical finite element modeling of compressive fracture in confined alumina ceramic. <i>Acta Materialia</i> , 2006 , 54, 5135-5145	8.4	62
118	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
117	Effects of material properties on the fragmentation of brittle materials. <i>International Journal of Fracture</i> , 2006 , 139, 169-196	2.3	58
116	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
115	An elastic-visco-plastic analysis of ductile expanding ring. <i>International Journal of Impact Engineering</i> , 2006 , 33, 880-891	4	56
114	Finite-element modeling of dry sliding wear in metals. <i>Engineering Computations</i> , 2001 , 18, 592-610	1.4	56
113	Linear Elastic Fracture Mechanics Predicts the Propagation Distance of Frictional Slip. <i>Tribology Letters</i> , 2015 , 57, 1	2.8	54
112	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
111	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
110	A study of solid-particle erosion of metallic targets. <i>International Journal of Impact Engineering</i> , 2002 , 27, 347-358	4	51
109	A statistical investigation of the effects of grain boundary properties on transgranular fracture. <i>Acta Materialia</i> , 2008 , 56, 4739-4749	8.4	49
108	Shear bands in dense metallic granular materials. <i>Journal of the Mechanics and Physics of Solids</i> , 2004 , 52, 499-531	5	48
107	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
106	Relations between roughness, temperature and dry sliding friction at the atomic scale. <i>Tribology International</i> , 2013 , 59, 222-229	4.9	45

105	On the Propagation of Slip Fronts at Frictional Interfaces. <i>Tribology Letters</i> , 2012 , 48, 27-32	2.8	44
104	Tetrahedral composite finite elements. <i>International Journal for Numerical Methods in Engineering</i> , 2002 , 53, 1337-1351	2.4	44
103	Analysis of the brittle fragmentation of an expanding ring. <i>Computational Materials Science</i> , 2006 , 37, 74-85	3.2	43
102	Normal adhesive contact on rough surfaces: efficient algorithm for FFT-based BEM resolution. <i>Computational Mechanics</i> , 2017 , 60, 69-81	4	42
101	Dry Sliding Contact Between Rough Surfaces at the Atomistic Scale. <i>Tribology Letters</i> , 2011 , 44, 279-285	2.8	42
100	Plastic activity in nanoscratch molecular dynamics simulations of pure aluminium. <i>International Journal of Plasticity</i> , 2014 , 53, 90-106	7.6	41
99	Contact between representative rough surfaces. <i>Physical Review E</i> , 2012 , 86, 035601	2.4	41
98	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
97	Mathematical aspects of a new criterion for ranking scientific institutions based on the h-index. <i>Scientometrics</i> , 2008 , 75, 339-356	3	40
96	Asperity-Level Origins of Transition from Mild to Severe Wear. <i>Physical Review Letters</i> , 2018 , 120, 186105	7.4	39
95	Finite element simulation of shaped charges. <i>Finite Elements in Analysis and Design</i> , 2002 , 38, 921-936	2.2	38
94	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
93	Characteristic fragment size distributions in dynamic fragmentation. <i>Applied Physics Letters</i> , 2006 , 88, 261918	3.4	33
92	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
91	The Contact of Elastic Regular Wavy Surfaces Revisited. <i>Tribology Letters</i> , 2014 , 56, 171-183	2.8	32
90	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
89	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
88	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

87	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
86	Survival of heterogeneous stress distributions created by precursory slip at frictional interfaces. <i>Physical Review Letters</i> , 2013 , 111, 164302	7.4	30
85	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
84	Normal contact between rough surfaces by the Discrete Element Method. <i>Tribology International</i> , 2012 , 47, 1-8	4.9	27
83	Insights into the thermo-mechanics of orthogonal nanometric machining. <i>Computational Materials Science</i> , 2013 , 72, 116-126	3.2	27
82	The effect of loading on surface roughness at the atomistic level. <i>Computational Mechanics</i> , 2012 , 50, 273-283	4	27
81	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
80	Adhesive wear mechanisms uncovered by atomistic simulations. <i>Friction</i> , 2018 , 6, 245-259	5.6	26
79	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
78	Microbranching instability in phase-field modelling of dynamic brittle fracture. <i>Applied Physics Letters</i> , 2017 , 110, 151903	3.4	25
77	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
76	Emergence of self-affine surfaces during adhesive wear. <i>Nature Communications</i> , 2019 , 10, 1116	17.4	24
75	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
74	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
73	Three-dimensional numerical simulations of dynamic fracture in silicon carbide reinforced aluminum. <i>Engineering Fracture Mechanics</i> , 2004 , 71, 1357-1378	4.2	23
72	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
71	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
70	Avalanches in dry and saturated disordered media at fracture. <i>Physical Review E</i> , 2016 , 93, 043002	2.4	21

69	Dynamic crack propagation in a heterogeneous ceramic microstructure, insights from a cohesive model. <i>Acta Materialia</i> , 2015 , 88, 136-146	8.4	20
68	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
67	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
66	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
65	The autocorrelation function for island areas on self-affine surfaces. <i>Journal of Physics Condensed Matter</i> , 2011 , 23, 215004	1.8	18
64	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
63	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
62	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
61	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
60	Unstable Slip Pulses and Earthquake Nucleation as a Nonequilibrium First-Order Phase Transition. <i>Physical Review Letters</i> , 2018 , 121, 234302	7.4	15
59	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
58	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
57	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
56	Dynamic fragmentation of a ring: predictable fragment mass distributions. <i>Physical Review E</i> , 2010 , 82, 066105	2.4	14
55	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
54	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
53	Interplay between Process Zone and Material Heterogeneities for Dynamic Cracks. <i>Physical Review Letters</i> , 2017 , 119, 144101	7.4	12
52	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

51	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
50	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
49	A study of frictional contact in dynamic fracture along bimaterial interfaces. <i>International Journal of Fracture</i> , 2014 , 189, 149-162	2.3	11
48	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
47	Effects of residual stresses on the tensile fatigue behavior of concrete. <i>Cement and Concrete Research</i> , 2016 , 89, 206-219	10.3	11
46	The role of viscoelasticity on heterogeneous stress fields at frictional interfaces. <i>Mechanics of Materials</i> , 2015 , 80, 276-287	3.3	10
45	A semi-discrete and non-local crystal plasticity model for nanocrystalline metals. <i>Scripta Materialia</i> , 2006 , 54, 1397-1402	5.6	10
44	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
43	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
42	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
41	Influence of heterogeneities on crack propagation. <i>International Journal of Fracture</i> , 2018 , 209, 77-90	2.3	9
40	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
39	Molecular dynamics nano-scratching of aluminium: a novel quantitative energy-based analysis method. <i>Procedia IUTAM</i> , 2012 , 3, 192-204		8
38	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
37	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
36	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
35	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
34	Supershear bursts in the propagation of a tensile crack in linear elastic material. <i>Physical Review E</i> , 2018 , 98,	2.4	7

33	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
32	Role of interfacial adhesion on minimum wear particle size and roughness evolution. <i>Physical Review E</i> , 2020 , 102, 043001	2.4	6
31	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
30	Deformation by grain boundary hinge-like behavior. <i>Materials Letters</i> , 2008 , 62, 57-60	3.3	6
29	A hierarchical detection framework for computational contact mechanics. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2014 , 268, 574-588	5.7	5
28	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
27	Tamaas: a library for elastic-plastic contact of periodic rough surfaces. <i>Journal of Open Source Software</i> , 2020 , 5, 2121	5.2	5
26	Earthquake Nucleation Along Faults With Heterogeneous Weakening Rate. <i>Geophysical Research Letters</i> , 2021 , 48, e2021GL094901	4.9	5
25	Emergence of Cracklike Behavior of Frictional Rupture: The Origin of Stress Drops. <i>Physical Review X</i> , 2019 , 9,	9.1	5
24	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
23	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
22	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
21	MD/FE Multiscale Modeling of Contact. <i>Nanoscience and Technology</i> , 2015 , 289-312	0.6	3
20	Toward Demystifying the Mohs Hardness Scale. <i>Journal of the American Ceramic Society</i> , 2015 , 98, 2681-2688	3.6	3
19	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
18	Explosive fragmentation of Prince Rupert's drops leads to well-defined fragment sizes. <i>Nature Communications</i> , 2021 , 12, 2521	17.4	3
17	Creation and evolution of roughness on silica under unlubricated wear. <i>Wear</i> , 2021 , 472-473, 203648	3.5	3
16	Velocity-driven frictional sliding: Coarsening and steady-state pulses. <i>Journal of the Mechanics and Physics of Solids</i> , 2021 , 158, 104607	5	3

15	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
14	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
13	Numerical Convergence of the Cohesive Element Approach in Dynamic Fragmentation Simulations. <i>AIP Conference Proceedings</i> , 2006 ,	0	2
12	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
11	Adhesive Wear Regimes on Rough Surfaces and Interaction of Micro-contacts. <i>Tribology Letters</i> , 2021 , 69, 1	2.8	2
10	Damage cluster distributions in numerical concrete at the mesoscale. <i>Physical Review E</i> , 2017 , 95, 043002.	2.4	1
9	Optimum energy on the fragmentation of kidney stones by direct impact. <i>Engineering Computations</i> , 2011 , 28, 747-764	1.4	1
8	Onset of sliding across scales: How the contact topography impacts frictional strength. <i>Physical Review Materials</i> , 2021 , 5,	3.2	1
7	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
6	Numerical Investigation of Dynamic Compressive Loading	417-423	1
5	cRacklet: a spectral boundary integral method library for interfacial rupture simulation. <i>Journal of Open Source Software</i> , 2022 , 7, 3724	5.2	0
4	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
3	Adhesive wear with a coarse-grained discrete element model. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2022 , 397, 115124	5.7	0
2	A Simple Mechanistic Model for Friction of Rough Partially Lubricated Surfaces. <i>Tribology Letters</i> , 2021 , 69, 1	2.8	
1	An Optimized Material Removal Process	2022 , 355-366	