

Yang Xiang

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.

79
papers

1,264
citations

21
h-index

33
g-index

79
ext. papers

1,464
ext. citations

4.2
avg, IF

5
L-index

#	Paper	IF	Citations
79	A Three-Dimensional Continuum Simulation Method for Grain Boundary Motion Incorporating Dislocation Structure. <i>Journal of Scientific Computing</i> , 2022 , 90, 1	2.3	2
78	Continuum Model and Numerical Method for Dislocation Structure and Energy of Grain Boundaries. <i>Multiscale Modeling and Simulation</i> , 2022 , 20, 323-348	1.8	
77	Convergence from atomistic model to Peierls-Nabarro model for dislocations in bilayer system with complex lattice. <i>Communications in Mathematical Sciences</i> , 2022 , 20, 947-986	1	
76	Computation of transverse-electric polarized optical eigenstates in dielectric systems based on perfectly matched layer.. <i>Physical Review E</i> , 2022 , 105, 045309	2.4	
75	Energy Scaling and Asymptotic Properties of One-Dimensional Discrete System with Generalized Lennard-Jones (m, n) Interaction. <i>Journal of Nonlinear Science</i> , 2021 , 31, 1	2.8	
74	Continuum model for dislocation structures of semicoherent interfaces. <i>Computational Materials Science</i> , 2021 , 190, 110277	3.2	
73	Equation of motion for grain boundaries in polycrystals. <i>Npj Computational Materials</i> , 2021 , 7,	10.9	2
72	Phase field model for self-climb of prismatic dislocation loops by vacancy pipe diffusion. <i>International Journal of Plasticity</i> , 2021 , 141, 102977	7.6	2
71	Revisit of the Peierls-Nabarro model for edge dislocations in Hilbert space. <i>Discrete and Continuous Dynamical Systems - Series B</i> , 2021 , 26, 3177	1.3	3
70	Cauchy-Born rule and stability of crystalline solids at finite temperature. <i>Communications in Mathematical Sciences</i> , 2021 , 19, 1461-1490	1	
69	Grain Boundary Triple Junction Dynamics: A Continuum Disconnection Model. <i>SIAM Journal on Applied Mathematics</i> , 2020 , 80, 1101-1122	1.8	5
68	A New Formulation of Coupling and Sliding Motions of Grain Boundaries Based on Dislocation Structure. <i>SIAM Journal on Applied Mathematics</i> , 2020 , 80, 2365-2387	1.8	2
67	Stochastic Peierls--Nabarro Model for Dislocations in High Entropy Alloys. <i>SIAM Journal on Applied Mathematics</i> , 2020 , 80, 2496-2517	1.8	1
66	An Elastic Interaction-Based Loss Function for Medical Image Segmentation. <i>Lecture Notes in Computer Science</i> , 2020 , 755-764	0.9	3
65	Characterisation of dislocation patterning behaviour with a continuum dislocation dynamics model on two parallel slip planes equipped with a deep neural network resolving local microstructures. <i>International Journal of Solids and Structures</i> , 2020 , 198, 57-71	3.1	7
64	Perfectly-matched-layer method for optical modes in dielectric cavities. <i>Physical Review A</i> , 2020 , 102,	2.6	4
63	Dislocation dynamics formulation for self-climb of dislocation loops by vacancy pipe diffusion. <i>International Journal of Plasticity</i> , 2019 , 120, 262-277	7.6	7

62	Disconnection description of triple-junction motion. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 8756-8765	11.5	23
61	Perturbation model for optical modes in deformed disks. <i>Physical Review A</i> , 2019 , 99,	2.6	4
60	A Continuum Multi-Disconnection-Mode model for grain boundary migration. <i>Journal of the Mechanics and Physics of Solids</i> , 2019 , 133, 103731	5	10
59	The effect of randomness on the strength of high-entropy alloys. <i>Acta Materialia</i> , 2019 , 166, 424-434	8.4	46
58	Motion of grain boundaries incorporating dislocation structure. <i>Journal of the Mechanics and Physics of Solids</i> , 2018 , 117, 157-178	5	12
57	A continuum model for distributions of dislocations incorporating short-range interactions. <i>Communications in Mathematical Sciences</i> , 2018 , 16, 491-522	1	1
56	Role of Grain Boundaries under Long-Time Radiation. <i>Physical Review Letters</i> , 2018 , 120, 222501	7.4	6
55	From Atomistic Model to the Peierls-Nabarro Model with $\{\gamma\}$ -surface for Dislocations. <i>Archive for Rational Mechanics and Analysis</i> , 2018 , 230, 735-781	2.3	6
54	Self-healing of low angle grain boundaries by vacancy diffusion and dislocation climb. <i>Scripta Materialia</i> , 2018 , 155, 155-159	5.6	11
53	Point defect sink efficiency of low-angle tilt grain boundaries. <i>Journal of the Mechanics and Physics of Solids</i> , 2017 , 101, 166-179	5	13
52	A three-scale homogenisation approach to the prediction of long-time absorption of radiation induced interstitials by nanovoids at interfaces. <i>Journal of the Mechanics and Physics of Solids</i> , 2017 , 105, 1-20	5	6
51	Energy of low angle grain boundaries based on continuum dislocation structure. <i>Acta Materialia</i> , 2017 , 126, 11-24	8.4	22
50	Equation of Motion for a Grain Boundary. <i>Physical Review Letters</i> , 2017 , 119, 246101	7.4	30
49	An Efficient High Order Method for Dislocation Climb in Two Dimensions. <i>Multiscale Modeling and Simulation</i> , 2017 , 15, 235-253	1.8	7
48	Dislocation climb models from atomistic scheme to dislocation dynamics. <i>Journal of the Mechanics and Physics of Solids</i> , 2017 , 99, 242-258	5	20
47	Stability of dislocation networks of low angle grain boundaries using a continuum energy formulation. <i>Discrete and Continuous Dynamical Systems - Series B</i> , 2017 , 22, 31-31	1.3	
46	Continuum dynamics of the formation, migration and dissociation of self-locked dislocation structures on parallel slip planes. <i>Journal of the Mechanics and Physics of Solids</i> , 2016 , 96, 369-387	5	5
45	Twisted Bilayer Graphene: Moiré with a Twist. <i>Nano Letters</i> , 2016 , 16, 5923-7	11.5	112

44	Energy Scaling and Asymptotic Properties of Step Bunching in Epitaxial Growth with Elasticity Effects. <i>Multiscale Modeling and Simulation</i> , 2016 , 14, 737-771	1.8	2
43	Structure and energetics of interlayer dislocations in bilayer graphene. <i>Physical Review B</i> , 2016 , 93,	3.3	23
42	The role of dislocation pile-up in flow stress determination and strain hardening. <i>Scripta Materialia</i> , 2016 , 116, 53-56	5.6	15
41	Relaxation of low-angle grain boundary structure by climb of the constituent dislocations. <i>Scripta Materialia</i> , 2016 , 114, 35-40	5.6	8
40	Homogenization of a Row of Dislocation Dipoles from Discrete Dislocation Dynamics. <i>SIAM Journal on Applied Mathematics</i> , 2016 , 76, 750-775	1.8	12
39	Three-dimensional formulation of dislocation climb. <i>Journal of the Mechanics and Physics of Solids</i> , 2015 , 83, 319-337	5	38
38	A continuum model for dislocation dynamics in three dimensions using the dislocation density potential functions and its application to micro-pillars. <i>Journal of the Mechanics and Physics of Solids</i> , 2015 , 84, 230-253	5	13
37	A Numerical Scheme for Generalized Peierls-Nabarro Model of Dislocations Based on the Fast Multipole Method and Iterative Grid Redistribution. <i>Communications in Computational Physics</i> , 2015 , 18, 1282-1312	2.4	5
36	A continuum model for dislocation dynamics incorporating FrankRead sources and HallPetch relation in two dimensions. <i>International Journal of Plasticity</i> , 2014 , 60, 19-39	7.6	30
35	Atomistic, generalized PeierlsNabarro and analytical models for (111) twist boundaries in Al, Cu and Ni for all twist angles. <i>Acta Materialia</i> , 2014 , 69, 162-174	8.4	31
34	Continuum framework for dislocation structure, energy and dynamics of dislocation arrays and low angle grain boundaries. <i>Journal of the Mechanics and Physics of Solids</i> , 2014 , 69, 175-194	5	27
33	An adaptive level set method based on two-level uniform meshes and its application to dislocation dynamics. <i>International Journal for Numerical Methods in Engineering</i> , 2013 , 94, 573-597	2.4	6
32	Numerical simulation of dynamics of dislocation arrays and long-range stress fields of nonplanar dislocation arrays. <i>International Journal of Plasticity</i> , 2013 , 43, 85-100	7.6	4
31	Structure and energy of (111) low-angle twist boundaries in Al, Cu and Ni. <i>Acta Materialia</i> , 2013 , 61, 1328-1337	8.1	44
30	Fast Multipole Accelerated Boundary Integral Equation Method for Evaluating the Stress Field Associated with Dislocations in a Finite Medium. <i>Communications in Computational Physics</i> , 2012 , 12, 226-246	2.4	6
29	Asymptotic behaviors of the stress fields in the vicinity of dislocations and dislocation segments. <i>Philosophical Magazine</i> , 2012 , 92, 2351-2374	1.6	8
28	A continuum model for the dynamics of dislocation arrays. <i>Communications in Mathematical Sciences</i> , 2012 , 10, 1081-1103	1	4
27	Stabilizing force on perturbed grain boundaries using a dislocation model. <i>Scripta Materialia</i> , 2011 , 64, 5-8	5.6	6

26	A continuum model for core relaxation of incoherent twin boundaries based on the Peierls-Nabarro framework. <i>Scripta Materialia</i> , 2011 , 64, 438-441	5.6	8
25	Loss of interface coherency around a misfitting spherical inclusion. <i>Acta Materialia</i> , 2011 , 59, 5398-5410	8.4	31
24	Dislocation cross-slip mechanisms in aluminum. <i>Philosophical Magazine</i> , 2011 , 91, 4109-4125	1.6	14
23	DISLOCATION DYNAMICS IN 2 + 1 DIMENSIONS: SLIP PLANES, THIN FILMS, AND GRAIN BOUNDARIES. <i>Lecture Notes Series, Institute for Mathematical Sciences</i> , 2011 , 1-94	0.1	
22	A new version fast multipole method for evaluating the stress field of dislocation ensembles. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2010 , 18, 045006	2	20
21	Continuum model for dislocation dynamics in a slip plane. <i>Philosophical Magazine</i> , 2010 , 90, 4409-4428	1.6	10
20	Dislocation cross-slip in heteroepitaxial multilayer films. <i>Acta Materialia</i> , 2010 , 58, 226-234	8.4	10
19	Computing transition rates of thermally activated events in dislocation dynamics. <i>Scripta Materialia</i> , 2010 , 62, 206-209	5.6	8
18	Continuum model for the long-range elastic interaction on stepped epitaxial surfaces in 2+1 dimensions. <i>Physical Review B</i> , 2009 , 79,	3.3	3
17	A generalized Peierls-Nabarro model for kinked dislocations. <i>Philosophical Magazine</i> , 2009 , 89, 2333-2354	1.6	7
16	Continuum approximation of the Peach-Koehler force on dislocations in a slip plane. <i>Journal of the Mechanics and Physics of Solids</i> , 2009 , 57, 728-743	5	23
15	Derivation of a Continuum Model for the Long-Range Elastic Interaction on Stepped Epitaxial Surfaces in 2+1 Dimensions. <i>SIAM Journal on Applied Mathematics</i> , 2009 , 69, 1393-1414	1.8	16
14	A generalized Peierls-Nabarro model for curved dislocations and core structures of dislocation loops in Al and Cu. <i>Acta Materialia</i> , 2008 , 56, 1447-1460	8.4	64
13	Dislocation junctions as barriers to threading dislocation migration. <i>Applied Physics Letters</i> , 2007 , 90, 011905	3.4	5
12	An active contour model for image segmentation based on elastic interaction. <i>Journal of Computational Physics</i> , 2006 , 219, 455-476	4.1	48
11	Dislocation climb effects on particle bypass mechanisms. <i>Philosophical Magazine</i> , 2006 , 86, 3937-3957	1.6	60
10	Level set simulation of dislocation dynamics in thin films. <i>Acta Materialia</i> , 2006 , 54, 2371-2381	8.4	17
9	An integral equation method for epitaxial step-flow growth simulations. <i>Journal of Computational Physics</i> , 2006 , 216, 724-743	4.1	10

8 Level Set Dislocation Dynamics Method **2005**, 2307-2323

7 Elastic Interaction Models for Active Contours and Surfaces. *Lecture Notes in Computer Science*, **2005**, 314-323 0.9

6 Misfit elastic energy and a continuum model for epitaxial growth with elasticity on vicinal surfaces. *Physical Review B*, **2004**, 69, 3.3 23

5 Level set simulations of dislocation-particle bypass mechanisms. *Acta Materialia*, **2004**, 52, 1745-1760 8.4 73

4 A level set method for dislocation dynamics. *Acta Materialia*, **2003**, 51, 5499-5518 8.4 82

3 Nonlinear evolution equation for the stress-driven morphological instability. *Journal of Applied Physics*, **2002**, 91, 9414-9422 2.5 43

2 Derivation of a Continuum Model for Epitaxial Growth with Elasticity on Vicinal Surface. *SIAM Journal on Applied Mathematics*, **2002**, 63, 241-258 1.8 30

1 A new active contour method based on elastic interaction 5