Yang Xiang

List of Publications by Year
in descending order

78 papers	1,681 citations	304602 22 h-index	315616 38 g-index
79 all docs	79 docs citations	79 times ranked	1244 citing authors

#	Article	IF	Citations
1	Twisted Bilayer Graphene: Moiré with a Twist. Nano Letters, 2016, 16, 5923-5927.	4.5	175
2	A level set method for dislocation dynamics. Acta Materialia, 2003, 51, 5499-5518.	3.8	91
3	The effect of randomness on the strength of high-entropy alloys. Acta Materialia, 2019, 166, 424-434.	3.8	81
4	Level set simulations of dislocation-particle bypass mechanisms. Acta Materialia, 2004, 52, 1745-1760.	3.8	80
5	A generalized Peierls–Nabarro model for curved dislocations and core structures of dislocation loops in Al and Cu. Acta Materialia, 2008, 56, 1447-1460.	3.8	77
6	Dislocation climb effects on particle bypass mechanisms. Philosophical Magazine, 2006, 86, 3937-3957.	0.7	73
7	An active contour model for image segmentation based on elastic interaction. Journal of Computational Physics, 2006, 219, 455-476.	1.9	64
8	Disconnection description of triple-junction motion. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 8756-8765.	3.3	51
9	Structure and energy of (1 1 1) low-angle twist boundaries in Al, Cu and Ni. Acta Materialia, 2013, 61, 1327-1337.	3.8	50
10	Three-dimensional formulation of dislocation climb. Journal of the Mechanics and Physics of Solids, 2015, 83, 319-337.	2.3	49
11	Equation of Motion for a Grain Boundary. Physical Review Letters, 2017, 119, 246101.	2.9	47
12	Nonlinear evolution equation for the stress-driven morphological instability. Journal of Applied Physics, 2002, 91, 9414-9422.	1.1	45
13	Atomistic, generalized Peierls–Nabarro and analytical models for (111) twist boundaries in Al, Cu and Ni for all twist angles. Acta Materialia, 2014, 69, 162-174.	3.8	36
14	Structure and energetics of interlayer dislocations in bilayer graphene. Physical Review B, 2016, 93, .	1.1	36
15	Derivation of a Continuum Model for Epitaxial Growth with Elasticity on Vicinal Surface. SIAM Journal on Applied Mathematics, 2002, 63, 241-258.	0.8	33
16	Continuum framework for dislocation structure, energy and dynamics of dislocation arrays and low angle grain boundaries. Journal of the Mechanics and Physics of Solids, 2014, 69, 175-194.	2.3	33
17	A continuum model for dislocation dynamics incorporating Frank–Read sources and Hall–Petch relation in two dimensions. International Journal of Plasticity, 2014, 60, 19-39.	4.1	33
18	Loss of interface coherency around a misfitting spherical inclusion. Acta Materialia, 2011, 59, 5398-5410.	3.8	32

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19	Energy of low angle grain boundaries based on continuum dislocation structure. Acta Materialia, 2017, 126, 11-24.	3.8	32
20	Dislocation climb models from atomistic scheme to dislocation dynamics. Journal of the Mechanics and Physics of Solids, 2017, 99, 242-258.	2.3	29
21	Continuum approximation of the Peach–Koehler force on dislocations in a slip plane. Journal of the Mechanics and Physics of Solids, 2009, 57, 728-743.	2.3	28
22	Misfit elastic energy and a continuum model for epitaxial growth with elasticity on vicinal surfaces. Physical Review B, 2004, 69, .	1.1	25
23	The role of dislocation pile-up in flow stress determination and strain hardening. Scripta Materialia, 2016, 116, 53-56.	2.6	24
24	A new version fast multipole method for evaluating the stress field of dislocation ensembles. Modelling and Simulation in Materials Science and Engineering, 2010, 18, 045006.	0.8	21
25	Level set simulation of dislocation dynamics in thin films. Acta Materialia, 2006, 54, 2371-2381.	3.8	20
26	A continuum model for dislocation dynamics in three dimensions using the dislocation density potential functions and its application to micro-pillars. Journal of the Mechanics and Physics of Solids, 2015, 84, 230-253.	2.3	20
27	Motion of grain boundaries incorporating dislocation structure. Journal of the Mechanics and Physics of Solids, 2018, 117, 157-178.	2.3	18
28	Derivation of a Continuum Model for the Long-Range Elastic Interaction on Stepped Epitaxial Surfaces in $2+1$ Dimensions. SIAM Journal on Applied Mathematics, 2009, 69, 1393-1414.	0.8	17
29	A Continuum Multi-Disconnection-Mode model for grain boundary migration. Journal of the Mechanics and Physics of Solids, 2019, 133, 103731.	2.3	17
30	Dislocation cross-slip mechanisms in aluminum. Philosophical Magazine, 2011, 91, 4109-4125.	0.7	16
31	Self-healing of low angle grain boundaries by vacancy diffusion and dislocation climb. Scripta Materialia, 2018, 155, 155-159.	2.6	16
32	Point defect sink efficiency of low-angle tilt grain boundaries. Journal of the Mechanics and Physics of Solids, 2017, 101, 166-179.	2.3	15
33	Dislocation cross-slip in heteroepitaxial multilayer films. Acta Materialia, 2010, 58, 226-234.	3.8	14
34	Dislocation dynamics formulation for self-climb of dislocation loops by vacancy pipe diffusion. International Journal of Plasticity, 2019, 120, 262-277.	4.1	14
35	Equation of motion for grain boundaries in polycrystals. Npj Computational Materials, 2021, 7, .	3.5	14
36	Continuum model for dislocation dynamics in a slip plane. Philosophical Magazine, 2010, 90, 4409-4428.	0.7	12

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37	Asymptotic behaviors of the stress fields in the vicinity of dislocations and dislocation segments. Philosophical Magazine, 2012, 92, 2351-2374.	0.7	12
38	Homogenization of a Row of Dislocation Dipoles from Discrete Dislocation Dynamics. SIAM Journal on Applied Mathematics, 2016, 76, 750-775.	0.8	12
39	Grain Boundary Triple Junction Dynamics: A Continuum Disconnection Model. SIAM Journal on Applied Mathematics, 2020, 80, 1101-1122.	0.8	12
40	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. International Journal of Solids and Structures, 2020, 198, 57-71.	1.3	12
41	Relaxation of low-angle grain boundary structure by climb of the constituent dislocations. Scripta Materialia, 2016, 114, 35-40.	2.6	11
42	Role of Grain Boundaries under Long-Time Radiation. Physical Review Letters, 2018, 120, 222501.	2.9	11
43	A New Active Contour Method Based on Elastic Interaction. , 0, , .		10
44	An integral equation method for epitaxial step-flow growth simulations. Journal of Computational Physics, 2006, 216, 724-743.	1.9	10
45	Computing transition rates of thermally activated events in dislocation dynamics. Scripta Materialia, 2010, 62, 206-209.	2.6	10
46	A three-scale homogenisation approach to the prediction of long-time absorption of radiation induced interstitials by nanovoids at interfaces. Journal of the Mechanics and Physics of Solids, 2017, 105, 1-20.	2.3	10
47	An Elastic Interaction-Based Loss Function for Medical Image Segmentation. Lecture Notes in Computer Science, 2020, , 755-764.	1.0	10
48	A continuum model for core relaxation of incoherent twin boundaries based on the Peierls–Nabarro framework. Scripta Materialia, 2011, 64, 438-441.	2.6	9
49	From Atomistic Model to the Peierls–Nabarro Model with $${gamma}$$ γ -surface for Dislocations. Archive for Rational Mechanics and Analysis, 2018, 230, 735-781.	1.1	9
50	An Efficient High Order Method for Dislocation Climb in Two Dimensions. Multiscale Modeling and Simulation, 2017, 15, 235-253.	0.6	8
51	A generalized Peierls–Nabarro model for kinked dislocations. Philosophical Magazine, 2009, 89, 2333-2354.	0.7	7
52	Stabilizing force on perturbed grain boundaries using a dislocation model. Scripta Materialia, 2011, 64, 5-8.	2.6	7
53	An adaptive level set method based on two–level uniform meshes and its application to dislocation dynamics. International Journal for Numerical Methods in Engineering, 2013, 94, 573-597.	1.5	7
54	Dislocation junctions as barriers to threading dislocation migration. Applied Physics Letters, 2007, 90, 011905.	1.5	6

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55	Fast Multipole Accelerated Boundary Integral Equation Method for Evaluating the Stress Field Associated with Dislocations in a Finite Medium. Communications in Computational Physics, 2012, 12, 226-246.	0.7	6
56	A Numerical Scheme for Generalized Peierls-Nabarro Model of Dislocations Based on the Fast Multipole Method and Iterative Grid Redistribution. Communications in Computational Physics, 2015, 18, 1282-1312.	0.7	6
57	Continuum dynamics of the formation, migration and dissociation of self-locked dislocation structures on parallel slip planes. Journal of the Mechanics and Physics of Solids, 2016, 96, 369-387.	2.3	6
58	Perfectly-matched-layer method for optical modes in dielectric cavities. Physical Review A, 2020, 102, .	1.0	6
59	A New Formulation of Coupling and Sliding Motions of Grain Boundaries Based on Dislocation Structure. SIAM Journal on Applied Mathematics, 2020, 80, 2365-2387.	0.8	6
60	Continuum model for the long-range elastic interaction on stepped epitaxial surfaces in2+1dimensions. Physical Review B, 2009, 79, .	1.1	5
61	Numerical simulation of dynamics of dislocation arrays and long-range stress fields of nonplanar dislocation arrays. International Journal of Plasticity, 2013, 43, 85-100.	4.1	5
62	Perturbation model for optical modes in deformed disks. Physical Review A, 2019, 99, .	1.0	5
63	Phase field model for self-climb of prismatic dislocation loops by vacancy pipe diffusion. International Journal of Plasticity, 2021, 141, 102977.	4.1	5
64	Stochastic Peierls--Nabarro Model for Dislocations in High Entropy Alloys. SIAM Journal on Applied Mathematics, 2020, 80, 2496-2517.	0.8	5
65	Revisit of the Peierls-Nabarro model for edge dislocations in Hilbert space. Discrete and Continuous Dynamical Systems - Series B, 2021, 26, 3177.	0.5	4
66	A continuum model for the dynamics of dislocation arrays. Communications in Mathematical Sciences, 2012, 10, 1081-1103.	0.5	4
67	Energy Scaling and Asymptotic Properties of Step Bunching in Epitaxial Growth with Elasticity Effects. Multiscale Modeling and Simulation, 2016, 14, 737-771.	0.6	2
68	A continuum model for distributions of dislocations incorporating short-range interactions. Communications in Mathematical Sciences, 2018, 16, 491-522.	0.5	2
69	A Three-Dimensional Continuum Simulation Method for Grain Boundary Motion Incorporating Dislocation Structure. Journal of Scientific Computing, 2022, 90, 1.	1.1	2
70	Energy Scaling and Asymptotic Properties of One-Dimensional Discrete System with Generalized Lennard-Jones (m,Ân) Interaction. Journal of Nonlinear Science, 2021, 31, 1.	1.0	1
71	Cauchyâ€"Born rule and stability of crystalline solids at finite temperature. Communications in Mathematical Sciences, 2021, 19, 1461-1490.	0.5	0
72	Continuum model for dislocation structures of semicoherent interfaces. Computational Materials Science, 2021, 190, 110277.	1.4	0

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73	Level Set Dislocation Dynamics Method. , 2005, , 2307-2323.		0
74	DISLOCATION DYNAMICS IN 2 + $\hat{I}\mu$ DIMENSIONS: SLIP PLANES, THIN FILMS, AND GRAIN BOUNDARIES. Lecture Notes Series, Institute for Mathematical Sciences, 2011, , 1-94.	0.2	0
75	Stability of dislocation networks of low angle grain boundaries using a continuum energy formulation. Discrete and Continuous Dynamical Systems - Series B, 2017, 22, 31-31.	0.5	0
76	Continuum Model and Numerical Method for Dislocation Structure and Energy of Grain Boundaries. Multiscale Modeling and Simulation, 2022, 20, 323-348.	0.6	0
77	Convergence from atomistic model to Peierlsâ€"Nabarro model for dislocations in bilayer system with complex lattice. Communications in Mathematical Sciences, 2022, 20, 947-986.	0.5	0
78	Computation of transverse-electric polarized optical eigenstates in dielectric systems based on perfectly matched layer. Physical Review E, 2022, 105, 045309.	0.8	0