

Martin Grant

List of Publications by Year in descending order

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132
papers

6,691
citations

71102

41
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62596

80
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132
all docs

132
docs citations

132
times ranked

3733
citing authors

#	ARTICLE	IF	CITATIONS
1	Modeling Elasticity in Crystal Growth. <i>Physical Review Letters</i> , 2002, 88, 245701.	7.8	766
2	Modeling elastic and plastic deformations in nonequilibrium processing using phase field crystals. <i>Physical Review E</i> , 2004, 70, 051605.	2.1	664
3	Phase-field crystal modeling and classical density functional theory of freezing. <i>Physical Review B</i> , 2007, 75, .	3.2	506
4	Thermal Effects on Atomic Friction. <i>Physical Review Letters</i> , 2001, 87, 174301.	7.8	327
5	Theory and simulation of Ostwald ripening. <i>Physical Review B</i> , 1993, 47, 14110-14125.	3.2	279
6	Dynamics of driven interfaces with a conservation law. <i>Physical Review A</i> , 1989, 40, 6763-6766.	2.5	176
7	The hydrophobic effect and its role in cold denaturation. <i>Cryobiology</i> , 2010, 60, 91-99.	0.7	164
8	Phase separation in two-dimensional binary fluids. <i>Physical Review A</i> , 1985, 31, 1001-1005.	2.5	162
9	Sharp interface limits of phase-field models. <i>Physical Review E</i> , 2001, 64, 021604.	2.1	138
10	Melting at dislocations and grain boundaries: A phase field crystal study. <i>Physical Review B</i> , 2008, 77, .	3.2	132
11	Stochastic eutectic growth. <i>Physical Review Letters</i> , 1994, 72, 677-680.	7.8	126
12	Microscopic Mechanism for Cold Denaturation. <i>Physical Review Letters</i> , 2008, 100, 118101.	7.8	114
13	Growth of unstable domains in the two-dimensional Ising model. <i>Physical Review B</i> , 1985, 31, 281-286.	3.2	111
14	Ordering Dynamics in the Two-Dimensional Stochastic Swift-Hohenberg Equation. <i>Physical Review Letters</i> , 1992, 68, 3024-3027.	7.8	105
15	Model of Surface Instabilities Induced by Stress. <i>Physical Review Letters</i> , 1999, 82, 1736-1739.	7.8	101
16	Model for calcium dependent oscillatory growth in pollen tubes. <i>Journal of Theoretical Biology</i> , 2008, 253, 363-374.	1.7	86
17	Theory for the early stages of phase separation: The long-range-force limit. <i>Physical Review B</i> , 1985, 31, 3027-3039.	3.2	84
18	Ostwald ripening in two and three dimensions. <i>Physical Review B</i> , 1992, 45, 8173-8176.	3.2	82

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19	Microfilament Orientation Constrains Vesicle Flow and Spatial Distribution in Growing Pollen Tubes. Biophysical Journal, 2009, 97, 1822-1831.	0.5	82
20	Multiple scale model for cell migration in monolayers: Elastic mismatch between cells enhances motility. Scientific Reports, 2015, 5, 11745.	3.3	81
21	Monte Carlo renormalization-group study of spinodal decomposition: Scaling and growth. Physical Review B, 1989, 39, 11971-11981.	3.2	74
22	Simulation of an atomistic dynamic field theory for monatomic liquids: Freezing and glass formation. Physical Review E, 2008, 77, 061506.	2.1	73
23	Phase-field modeling of eutectic growth. Physical Review E, 2000, 61, 6705-6720.	2.1	67
24	Temperature dependence of the dynamics of random interfaces. Physical Review B, 1983, 28, 5496-5506.	3.2	64
25	Monte Carlo Renormalization-Group Study of the Late-Stage Dynamics of Spinodal Decomposition. Physical Review Letters, 1988, 60, 2657-2660.	7.8	64
26	Kinetic roughening of interfaces in driven systems. Physical Review A, 1991, 43, 1727-1743.	2.5	64
27	Kinetics of interface growth in driven systems. Physical Review Letters, 1990, 64, 1262-1265.	7.8	61
28	Spinodal Decomposition in Fluids. Physical Review Letters, 1999, 82, 14-16.	7.8	61
29	Speckle from phase-ordering systems. Physical Review E, 1997, 56, 6601-6612.	2.1	60
30	Monte Carlo Renormalization-Group Study of the Dynamics of an Unstable State. Physical Review Letters, 1985, 54, 1264-1267.	7.8	59
31	Dynamic scaling and quasiordered states in the two-dimensional Swift-Hohenberg equation. Physical Review A, 1992, 46, 7618-7629.	2.5	56
32	Theory of nucleation and growth during phase separation. Physical Review E, 1999, 59, 4175-4187.	2.1	53
33	Three-dimensional "Mercedes-Benz" model for water. Journal of Chemical Physics, 2009, 131, 054505.	3.0	53
34	Theory for the nucleation of a crystalline droplet from the melt. Physical Review B, 1985, 32, 7299-7307.	3.2	52
35	Domain Growth in the Ising Model in a Random Magnetic Field. Physical Review Letters, 1984, 53, 2266-2269.	7.8	48
36	Interface roughening and domain growth in the dilute Ising model. Physical Review B, 1987, 35, 6792-6795.	3.2	48

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37	Dislocations and morphological instabilities: Continuum modeling of misfitting heteroepitaxial films. Physical Review B, 2002, 65, .	3.2	48
38	Domain growth in the random-field Ising model: The breakdown of self-similar scaling in two dimensions. Physical Review B, 1984, 29, 6266-6275.	3.2	43
39	Seaweed to Dendrite Transition in Directional Solidification. Physical Review Letters, 2003, 91, 155502.	7.8	43
40	Modeling Multiple Time Scales during Glass Formation with Phase-Field Crystals. Physical Review Letters, 2011, 106, 175702.	7.8	43
41	Breakdown of self-similar scaling in the two-dimensional random-field Ising model: A Monte Carlo study. Physical Review B, 1985, 32, 1575-1583.	3.2	42
42	Thermal conductivity of a kinetic Ising model. Physical Review B, 1988, 38, 9323-9326.	3.2	40
43	Directional solidification in two and three dimensions. Physical Review Letters, 1993, 71, 3323-3326.	7.8	40
44	Model of the Kinetics of Polymorphous Crystallization. Physical Review Letters, 1995, 75, 2156-2159.	7.8	40
45	Domain growth in the random-field Ising model. Physical Review B, 1984, 29, 1521-1523.	3.2	39
46	Phase diagram of a lattice model for ternary mixtures of water, oil, and surfactants. Physical Review A, 1991, 44, 8184-8188.	2.5	37
47	Role of activated processes and boundary conditions in the domain growth of the Potts model. Physical Review B, 1987, 36, 7036-7042.	3.2	35
48	The effect of positive interactions on community structure in a multi-species metacommunity model along an environmental gradient. Ecological Modelling, 2010, 221, 885-894.	2.5	35
49	Dynamic Monte Carlo renormalization-group method. Physical Review B, 1993, 47, 5646-5652.	3.2	34
50	Phase-field model for collective cell migration. Physical Review E, 2016, 93, 052405.	2.1	33
51	Model for dynamics of structural glasses. Physical Review E, 1997, 55, 2132-2144.	2.1	31
52	Experimental evidence for localization of acoustic waves in three dimensions. Physical Review Letters, 1990, 64, 3135-3138.	7.8	30
53	Dependence of friction on roughness, velocity, and temperature. Physical Review E, 2008, 77, 036123.	2.1	30
54	Lack of self-averaging, multiscaling, and $1/f$ noise in the kinetics of domain growth. Physical Review Letters, 1989, 63, 551-554.	7.8	28

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55	Late stage droplet growth. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1994, 204, 770-788.	2.6	27
56	Theory of melt fracture instabilities in the capillary flow of polymer melts. <i>Physical Review E</i> , 1997, 55, 2976-2992.	2.1	25
57	Domain growth in the clock model. <i>Physical Review B</i> , 1985, 31, 3040-3047.	3.2	24
58	Model for Melt Fracture Instabilities in the Capillary Flow of Polymer Melts. <i>Physical Review Letters</i> , 1996, 77, 655-658.	7.8	24
59	Phase-field-crystal model for magnetocrystalline interactions in isotropic ferromagnetic solids. <i>Physical Review E</i> , 2013, 88, 032407.	2.1	24
60	Dynamics of first-order transitions in two-dimensional systems with long-range interactions. <i>Physical Review B</i> , 1990, 41, 4646-4652.	3.2	23
61	Nonisothermal eutectic crystallization. <i>Physical Review E</i> , 1996, 54, 6476-6484.	2.1	23
62	Nucleation and growth: Decay of a metastable state. <i>Physical Review E</i> , 1997, 56, R21-R24.	2.1	22
63	Evolution of speckle during spinodal decomposition. <i>Physical Review E</i> , 1999, 60, 5151-5162.	2.1	22
64	Phase-field approach to chemotactic driving of neutrophil morphodynamics. <i>Physical Review E</i> , 2013, 88, 034702.	2.1	22
65	Dynamics of roughening and complete wetting. <i>Physical Review B</i> , 1988, 37, 5705-5712.	3.2	21
66	Late-time theory for the effects of a conserved field on the kinetics of an order-disorder transition. <i>Physical Review B</i> , 1991, 44, 6673-6688.	3.2	19
67	Elastic effects in the foaming of thermoplastics. <i>Physical Review E</i> , 1998, 58, 4654-4657.	2.1	19
68	Metastable states in the random-field Ising model. <i>Physical Review B</i> , 1987, 35, 4922-4928.	3.2	18
69	Scaling, propagation, and kinetic roughening of flame fronts in random media. <i>Journal of Statistical Physics</i> , 1995, 81, 737-759.	1.2	18
70	Dynamics of dislocations and surface instabilities in misfitting heteroepitaxial films. <i>Physical Review B</i> , 2001, 65, .	3.2	18
71	Modelling dielectric heterogeneity in electrophotography. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2004, 12, 91-107.	2.0	18
72	Positive interactions and the emergence of community structure in metacommunities. <i>Journal of Theoretical Biology</i> , 2010, 266, 419-429.	1.7	18

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73	Prediction of the Dependence of the Line Tension on the Composition of Linactants and the Temperature in Phase Separated Membranes. <i>Langmuir</i> , 2014, 30, 11734-11745.	3.5	18
74	Defects, Order, and Hysteresis in Driven Charge-Density Waves. <i>Physical Review Letters</i> , 1999, 83, 3518-3521.	7.8	17
75	Scaling in force spectroscopy of macromolecules. <i>Physical Review E</i> , 2005, 72, 011918.	2.1	17
76	Phase-field-crystal modeling of glass-forming liquids: Spanning time scales during vitrification, aging, and deformation. <i>Physical Review E</i> , 2014, 89, 062303.	2.1	16
77	Monte Carlo renormalization-group study of domain growth in the Potts model on a triangular lattice. <i>Physical Review B</i> , 1990, 41, 4663-4668.	3.2	15
78	Solidification of a Supercooled Liquid in a Narrow Channel. <i>Physical Review Letters</i> , 2001, 86, 5084-5087.	7.8	15
79	A phase field model for phase transformation in an elastically stressed binary alloy. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2005, 13, 299-319.	2.0	15
80	Micromechanics of emergent patterns in plastic flows. <i>Scientific Reports</i> , 2013, 3, 2728.	3.3	15
81	Domain-growth kinetics of systems with soft walls. <i>Physical Review B</i> , 1988, 37, 2274-2277.	3.2	14
82	Crossover scaling in the dynamics of driven systems. <i>Physical Review A</i> , 1990, 41, 7082-7085.	2.5	13
83	Nucleation, Growth, and Scaling in Slow Combustion. <i>Journal of Statistical Physics</i> , 1998, 90, 1401-1411.	1.2	13
84	Universality and scaling for the structure factor in dynamic order-disorder transitions. <i>Physical Review E</i> , 1998, 58, 5501-5507.	2.1	13
85	Roughening dynamics of systems with latent heat. <i>Physical Review Letters</i> , 1989, 63, 1693-1695.	7.8	12
86	Monte Carlo lattice-gas simulations of stable and unstable interfaces. <i>Physical Review A</i> , 1992, 45, 1024-1034.	2.5	12
87	Magnetic islands modelled by a phase-field-crystal approach. <i>European Physical Journal B</i> , 2018, 91, 1.	1.5	12
88	Generalized Langevin theory for inhomogeneous fluids: The equations of motion. <i>Physical Review A</i> , 1982, 25, 2727-2743.	2.5	10
89	Community-driven dispersal in an individual-based predator-prey model. <i>Ecological Complexity</i> , 2008, 5, 238-251.	2.9	9
90	Surface tension of a simple fluid: Many body potential. <i>Journal of Chemical Physics</i> , 1980, 72, 1482-1486.	3.0	8

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91	Monte Carlo simulations of transverse spin freezing in the three-dimensional frustrated Heisenberg model. <i>Journal of Applied Physics</i> , 1991, 69, 5231-5233.	2.5	8
92	Monte Carlo simulation studies of dendritic instabilities in three dimensions. <i>Physical Review E</i> , 1993, 47, 1235-1242.	2.1	8
93	Generalized Langevin theory for inhomogeneous fluids: The transverse current-current correlation function. <i>Journal of Chemical Physics</i> , 1982, 76, 5160-5166.	3.0	7
94	Possible consistency requirement for kinetic exponents. <i>Physical Review Letters</i> , 1989, 62, 1065-1065.	7.8	7
95	Monte Carlo renormalization-group study of self-organized criticality. <i>Physical Review A</i> , 1990, 41, 4195-4198.	2.5	7
96	A phase field model for neural cell chemotropism. <i>Europhysics Letters</i> , 2013, 102, 16001.	2.0	7
97	Time-scale investigation with the modified phase field crystal method. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2022, 30, 064001.	2.0	7
98	Temperature dependence of the amplitude of power-law growth in the spin-flip kinetic Ising model. <i>Physical Review B</i> , 1993, 48, 3661-3665.	3.2	6
99	Theory for quenches from ordered states in nonconserved systems. <i>Physical Review B</i> , 1993, 47, 2487-2492.	3.2	6
100	Sharkskin texturing instabilities in the flow of polymer melts. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1997, 239, 350-357.	2.6	6
101	Molecular weight effects on chain pull-out fracture of reinforced polymeric interfaces. <i>Physical Review E</i> , 1999, 60, 4460-4464.	2.1	6
102	Soft elasticity in solids composed of ellipse-shaped particles. <i>Europhysics Letters</i> , 2013, 101, 56004.	2.0	6
103	Coupling actin dynamics to phase-field in modeling neural growth. <i>Soft Matter</i> , 2015, 11, 4476-4480.	2.7	6
104	Quasidendritic growth due to elastic fields. <i>The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties</i> , 1998, 78, 103-107.	0.6	5
105	The chaser and the chased: a phase-field model of an immune response. <i>Soft Matter</i> , 2014, 10, 9715-9720.	2.7	5
106	Phase-field crystal for an antiferromagnet with elastic interactions. <i>Physical Review E</i> , 2019, 100, 022128.	2.1	5
107	Substrate mediated interaction between pairs of keratocytes: Multipole traction force models describe their migratory behavior. <i>PLoS ONE</i> , 2019, 14, e0212162.	2.5	5
108	Damage spreading during domain growth. <i>Physical Review E</i> , 1994, 49, R4763-R4766.	2.1	4

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109	Phase Separation of a Binary Fluid in the Inertia-Dominated Regime. <i>Physical Review Letters</i> , 2005, 95, 255702.	7.8	4
110	Ternary Systems Containing Surfactants. <i>Advances in Chemical Physics</i> , 2007, , 159-238.	0.3	4
111	Wavelet Imaging on Multiple Scales (WIMS) reveals focal adhesion distributions, dynamics and coupling between actomyosin bundle stability. <i>PLoS ONE</i> , 2017, 12, e0186058.	2.5	4
112	Kinetic roughening of the urban skyline. <i>Physical Review E</i> , 2020, 101, 050301.	2.1	4
113	Acoustic-wave localization in the presence of shear resonances. <i>Physical Review B</i> , 1991, 43, 10769-10779.	3.2	3
114	Growth kinetics in exciton systems. <i>Physical Review B</i> , 1993, 47, 1270-1275.	3.2	3
115	Numerical simulations of scattering speckle from phase ordering systems. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1997, 239, 363-372.	2.6	3
116	Surface tension of a molecular fluid. <i>Molecular Physics</i> , 1981, 43, 1035-1041.	1.7	2
117	Neural networks with constrained inputs as models for pattern formation in primate visual cortex. <i>Journal of Biological Physics</i> , 1991, 18, 217-245.	1.5	2
118	Cellular Automata, Langevin Equations, and Unstable States. <i>Physical Review Letters</i> , 1986, 57, 1970-1973.	7.8	1
119	Phase Diagram of a Lattice Model for Ternary Mixtures of Water, Oil, and Surfactants. <i>Materials Research Society Symposia Proceedings</i> , 1991, 248, 23.	0.1	1
120	Phase retrieval from speckle patterns of ordering systems. <i>Physical Review E</i> , 2009, 80, 041112.	2.1	1
121	Reply to the comment by Graziano on "The hydrophobic effect and its role in cold denaturation". <i>Cryobiology</i> , 2010, 60, 356-357.	0.7	1
122	Microphase separation in comblike liquid-crystalline diblock copolymers. <i>Physical Review E</i> , 2013, 88, 042602.	2.1	1
123	Generation of 1/f noise from a broken-symmetry model for the arbitrary absolute pitch of musical melodies. <i>Journal of the Acoustical Society of America</i> , 2017, 142, EL490-EL494.	1.1	1
124	Sharp interface model for elastic motile cells. <i>European Physical Journal E</i> , 2019, 42, 52.	1.6	1
125	Analysis of the refugees'™ drowning events:. <i>European Physical Journal Plus</i> , 2021, 136, 1.	2.6	1
126	Kinetics of the Nucleation of a Crystalline Droplet from the Melt. <i>Materials Research Society Symposia Proceedings</i> , 1985, 57, 79.	0.1	0

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127	Kinetic Roughening of Interfaces in Driven Systems. Materials Research Society Symposia Proceedings, 1990, 205, 429.	0.1	0
128	Phase Separation: From the Initial Nucleation Stage to the Final Ostwald Ripening Regime. Materials Research Society Symposia Proceedings, 1997, 481, 125.	0.1	0
129	RANDOM-FIELD ISING MODEL: DOMAIN GROWTH THEORY. , 1984, , 125-127.		0
130	COMPUTER SIMULATIONS OF DOMAIN GROWTH. , 1984, , 121-124.		0
131	Stability of Continuous Cellular Automata. Frontiers of Computer Science, 1990, , 27-45.	0.1	0
132	Modelling Pattern Formation on Primate Visual Cortex. Springer Series in Synergetics, 1995, , 101-127.	0.4	0