

David Kinderlehrer

List of Publications by Year in descending order

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82
papers

3,800
citations

147801

31
h-index

128289

60
g-index

89
all docs

89
docs citations

89
times ranked

1409
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 1 | Comparison of simulated and measured grain volume changes during grain growth. Physical Review Materials, 2022, 6, . | 2.4 | 3 |
| 2 | A Wasserstein gradient flow approach to Poisson–Nernst–Planck equations. ESAIM - Control, Optimisation and Calculus of Variations, 2017, 23, 137-164. | 1.3 | 17 |
| 3 | An Extended Variational Principle. , 2017, , 187-200. | | 5 |
| 4 | A hybrid variational principle for the Keller–Segel system in \mathbb{R}^2 . ESAIM: Mathematical Modelling and Numerical Analysis, 2015, 49, 1553-1576. | 1.9 | 33 |
| 5 | Numerical Analysis of the Vertex Models for Simulating Grain Boundary Networks. SIAM Journal on Applied Mathematics, 2015, 75, 762-786. | 1.8 | 12 |
| 6 | Grain growth and the puzzle of its stagnation in thin films: The curious tale of a tail and an ear. Progress in Materials Science, 2013, 58, 987-1055. | 32.8 | 96 |
| 7 | A Theory and Challenges for Coarsening in Microstructure. Springer INdAM Series, 2013, , 193-220. | 0.5 | 1 |
| 8 | Predictive Theory for the Grain Boundary Character Distribution. Materials Science Forum, 2012, 715-716, 279-285. | 0.3 | 3 |
| 9 | Critical events, entropy, and the grain boundary character distribution. Physical Review B, 2011, 83, . | 3.2 | 35 |
| 10 | An entropy based theory of the grain boundary character distribution. Discrete and Continuous Dynamical Systems, 2011, 30, 427-454. | 0.9 | 14 |
| 11 | The Janosy effect and hybrid variational principles. Discrete and Continuous Dynamical Systems - Series B, 2009, 11, 153-176. | 0.9 | 4 |
| 12 | Diffusion Mediated Transport in Multiple State Systems. SIAM Journal on Mathematical Analysis, 2008, 39, 1208-1230. | 1.9 | 4 |
| 13 | Towards a Statistical Theory of Texture Evolution in Polycrystals. SIAM Journal of Scientific Computing, 2008, 30, 3150-3169. | 2.8 | 18 |
| 14 | DIFFUSION MEDIATED TRANSPORT WITH A LOOK AT MOTOR PROTEINS. , 2008, , . | | 4 |
| 15 | Aspects of Modeling Transport in Small Systems with a Look at Motor Proteins. , 2008, , 153-163. | | 0 |
| 16 | Added dimensions to grain growth. Nature, 2007, 446, 995-996. | 27.8 | 14 |
| 17 | A Variational Approach to Modeling and Simulation of Grain Growth. SIAM Journal of Scientific Computing, 2006, 28, 1694-1715. | 2.8 | 44 |
| 18 | Grain boundary energy and grain growth in Al films: Comparison of experiments and simulations. Scripta Materialia, 2006, 54, 1059-1063. | 5.2 | 63 |

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 19 | Transport via mass transportation. Discrete and Continuous Dynamical Systems - Series B, 2005, 6, 311-338. | 0.9 | 0 |
| 20 | Transport in a molecular motor system. ESAIM: Mathematical Modelling and Numerical Analysis, 2004, 38, 1011-1034. | 1.9 | 15 |
| 21 | Grain Boundary Properties and Grain Growth: Al Foils, Al Films. Materials Research Society Symposia Proceedings, 2004, 819, N6.6.1. | 0.1 | 6 |
| 22 | Diffusion Mediated Transport and the Brownian Motor. , 2004, , 29-36. | | 0 |
| 23 | A Variational Principle for Molecular Motors. Meccanica, 2003, 38, 505-518. | 2.0 | 20 |
| 24 | Diffusion-Mediated Transport and the Flashing Ratchet. Archive for Rational Mechanics and Analysis, 2002, 161, 149-179. | 2.4 | 31 |
| 25 | The Surface Energy of MgO: Multiscale Reconstruction from Thermal Groove Geometry. Journal of Materials Science, 2002, 10, 233-242. | 1.2 | 8 |
| 26 | Discrete and continuous ratchets: from coin toss to molecular motor. Discrete and Continuous Dynamical Systems - Series B, 2002, 2, 153-167. | 0.9 | 22 |
| 27 | EVOLUTION OF GRAIN BOUNDARIES. Mathematical Models and Methods in Applied Sciences, 2001, 11, 713-729. | 3.3 | 57 |
| 28 | An Approach to the Mesoscale Simulation of Grain Growth. Materials Research Society Symposia Proceedings, 2000, 652, 1. | 0.1 | 4 |
| 29 | Approximation of Parabolic Equations Using the Wasserstein Metric. ESAIM: Mathematical Modelling and Numerical Analysis, 1999, 33, 837-852. | 1.9 | 33 |
| 30 | Some Regularity Results In Ferromagnetism. Communications in Partial Differential Equations, 1999, 25, 1235-1258. | 2.2 | 12 |
| 31 | Incoherence at heterogeneous interfaces. Journal of the Mechanics and Physics of Solids, 1999, 47, 1609-1632. | 4.8 | 1 |
| 32 | Extracting Grain Boundary and Surface Energy from Measurement of Triple Junction Geometry. Journal of Materials Science, 1999, 7, 321-337. | 1.2 | 58 |
| 33 | Dynamics of the fokker-planck equation. Phase Transitions, 1999, 69, 271-288. | 1.3 | 8 |
| 34 | Extracting the relative grain boundary free energy and mobility functions from the geometry of microstructures. Scripta Materialia, 1998, 38, 531-536. | 5.2 | 47 |
| 35 | The Variational Formulation of the Fokker-Planck Equation. SIAM Journal on Mathematical Analysis, 1998, 29, 1-17. | 1.9 | 935 |
| 36 | Microstructural Evolution and Metastability in Active Materials. Materials Research Society Symposia Proceedings, 1998, 529, 3. | 0.1 | 0 |

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 37 | <title>Metastability and hysteresis in active materials</title>. , 1997, , . | | 2 |
| 38 | The hysteretic event in the computation of magnetization. Journal of Nonlinear Science, 1997, 7, 101-128. | 2.1 | 7 |
| 39 | The simulation of magnetoelastic configurations. Physica B: Condensed Matter, 1997, 233, 376-380. | 2.7 | 1 |
| 40 | Free energy and the Fokker-Planck equation. Physica D: Nonlinear Phenomena, 1997, 107, 265-271. | 2.8 | 47 |
| 41 | <title>Simulation of magnetoelastic systems</title>. , 1996, , . | | 1 |
| 42 | Magnetoelastic Interactions. , 1996, , 177-189. | | 1 |
| 43 | Numerical analysis of oscillations in multiple well problems. Numerische Mathematik, 1995, 70, 259-282. | 1.9 | 46 |
| 44 | Theory of magnetostriction with application to Terfenolâ€œ. Journal of Applied Physics, 1994, 76, 7012-7014. | 2.5 | 28 |
| 45 | Energy functional depending on elastic strain and chemical composition. Calculus of Variations and Partial Differential Equations, 1994, 2, 283-313. | 1.7 | 34 |
| 46 | Gradient Young measures generated by sequences in Sobolev spaces. Journal of Geometric Analysis, 1994, 4, 59-90. | 1.0 | 173 |
| 47 | Computational hysteresis in modeling magnetic systems. IEEE Transactions on Magnetics, 1994, 30, 4380-4382. | 2.1 | 17 |
| 48 | Theory of magnetostriction with applications to Tb_xDy_{1-x}Fe₂. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1993, 68, 237-274. | 0.6 | 113 |
| 49 | <title>Mathematical approaches to the study of smart materials</title>. , 1993, , . | | 6 |
| 50 | Second variation of liquid crystal energy at $x \parallel x \perp$. Proceedings of the Royal Society A, 1992, 437, 475-487. | 0.9 | 13 |
| 51 | Weak Convergence of Integrands and the Young Measure Representation. SIAM Journal on Mathematical Analysis, 1992, 23, 1-19. | 1.9 | 82 |
| 52 | Numerical Approximation of the Solution of a Variational Problem with a Double Well Potential. SIAM Journal on Numerical Analysis, 1991, 28, 321-332. | 2.3 | 68 |
| 53 | Characterizations of young measures generated by gradients. Archive for Rational Mechanics and Analysis, 1991, 115, 329-365. | 2.4 | 210 |
| 54 | An Example of Frustration in a Ferromagnetic Material. , 1991, , 201-221. | | 4 |

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|----|--|-----|-----------|
| 55 | The relaxation of functionals with surface energies. <i>Asymptotic Analysis</i> , 1989, 2, 279-298. | 0.5 | 5 |
| 56 | Theory of diffusionless phase transitions. , 1989, , 51-84. | | 52 |
| 57 | Variational Principles with Linear Growth. , 1989, , 633-659. | | 2 |
| 58 | Variational Principles with Linear Growth. , 1989, , 633-659. | | 0 |
| 59 | Equilibrium configurations of crystals. <i>Archive for Rational Mechanics and Analysis</i> , 1988, 103, 237-277. | 2.4 | 200 |
| 60 | Existence, uniqueness, and regularity results for the two-body contact problem. <i>Applied Mathematics and Optimization</i> , 1987, 15, 251-277. | 1.6 | 33 |
| 61 | A Relation between Semi-Inverse and Saint-Venant Solutions for Prisms. <i>SIAM Journal on Mathematical Analysis</i> , 1986, 17, 626-640. | 1.9 | 6 |
| 62 | A Remark about the Stability of Smooth Equilibrium Configurations of Static Liquid Crystals. <i>Molecular Crystals and Liquid Crystals</i> , 1986, 139, 189-194. | 0.8 | 6 |
| 63 | Smoothness of linear laminates. <i>Archive for Rational Mechanics and Analysis</i> , 1986, 96, 81-96. | 2.4 | 57 |
| 64 | Existence and partial regularity of static liquid crystal configurations. <i>Communications in Mathematical Physics</i> , 1986, 105, 547-570. | 2.2 | 248 |
| 65 | Elastic plastic deformation. <i>Applied Mathematics and Optimization</i> , 1983, 10, 203-246. | 1.6 | 33 |
| 66 | The partially supported elastic beam. <i>Journal of Elasticity</i> , 1983, 13, 71-82. | 1.9 | 5 |
| 67 | Estimates for the solution and its stability in Signorini's problem. <i>Applied Mathematics and Optimization</i> , 1982, 8, 159-188. | 1.6 | 6 |
| 68 | Potential methods in variational inequalities. <i>Journal D'Analyse Mathematique</i> , 1980, 37, 285-295. | 0.8 | 70 |
| 69 | Regularity in elliptic free boundary problems I. <i>Journal D'Analyse Mathematique</i> , 1978, 34, 86-119. | 0.8 | 96 |
| 70 | The smoothness of the free boundary in the one phase stefan problem. <i>Communications on Pure and Applied Mathematics</i> , 1978, 31, 257-282. | 3.1 | 61 |
| 71 | Analyticity at the boundary of solutions of nonlinear second-order parabolic equations. <i>Communications on Pure and Applied Mathematics</i> , 1978, 31, 283-338. | 3.1 | 44 |
| 72 | Variational inequalities and free boundary problems. <i>Bulletin of the American Mathematical Society</i> , 1978, 84, 7-27. | 3.9 | 32 |

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 73 | A class of parabolic quasi-variational inequalities. <i>Journal of Differential Equations</i> , 1976, 21, 395-416. | 2.2 | 9 |
| 74 | Title is missing!. <i>Indiana University Mathematics Journal</i> , 1976, 25, 195. | 0.9 | 13 |
| 75 | Title is missing!. <i>Indiana University Mathematics Journal</i> , 1975, 24, 1005. | 0.9 | 97 |
| 76 | Title is missing!. <i>Indiana University Mathematics Journal</i> , 1974, 23, 831. | 0.9 | 128 |
| 77 | How a minimal surface leaves an obstacle. <i>Acta Mathematica</i> , 1973, 130, 221-242. | 3.9 | 20 |
| 78 | Some open questions about variational inequalities. <i>Israel Journal of Mathematics</i> , 1972, 13, 149-154. | 0.8 | 1 |
| 79 | The coincidence set of solutions of certain variational inequalities. <i>Archive for Rational Mechanics and Analysis</i> , 1971, 40, 231-250. | 2.4 | 29 |
| 80 | Variational inequalities with lower dimensional obstacles. <i>Israel Journal of Mathematics</i> , 1971, 10, 339-348. | 0.8 | 19 |
| 81 | The regularity of minimal surfaces defined over slit domains. <i>Pacific Journal of Mathematics</i> , 1971, 37, 109-117. | 0.5 | 6 |
| 82 | Grain Growth and the Puzzle of its Stagnation in Thin Films a Detailed Comparison of Experiments and Simulations. <i>Materials Science Forum</i> , 0, 715-716, 473-479. | 0.3 | 14 |