

Stefanos Papanikolaou

List of Publications by Year in descending order

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Version: 2024-02-01

60
papers

1,513
citations

361413

20
h-index

330143

37
g-index

62
all docs

62
docs citations

62
times ranked

1606
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 1 | Universality beyond power laws and the average avalanche shape. <i>Nature Physics</i> , 2011, 7, 316-320. | 16.7 | 185 |
| 2 | Minimal Model of Plasma Membrane Heterogeneity Requires Coupling Cortical Actin to Criticality. <i>Biophysical Journal</i> , 2011, 100, 1668-1677. | 0.5 | 172 |
| 3 | Quasi-periodic events in crystal plasticity and the self-organized avalanche oscillator. <i>Nature</i> , 2012, 490, 517-521. | 27.8 | 129 |
| 4 | Avalanches and plastic flow in crystal plasticity: an overview. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2018, 26, 013001. | 2.0 | 75 |
| 5 | Electronic states of graphene grain boundaries. <i>Physical Review B</i> , 2010, 82, . | 3.2 | 69 |
| 6 | Quantum criticality, lines of fixed points, and phase separation in doped two-dimensional quantum dimer models. <i>Physical Review B</i> , 2007, 76, . | 3.2 | 64 |
| 7 | Isostaticity at Frictional Jamming. <i>Physical Review Letters</i> , 2013, 110, 198002. | 7.8 | 63 |
| 8 | Obstacles and sources in dislocation dynamics: Strengthening and statistics of abrupt plastic events in nanopillar compression. <i>Journal of the Mechanics and Physics of Solids</i> , 2017, 102, 17-29. | 4.8 | 42 |
| 9 | Universality of Liquid-Gas Mott Transitions at Finite Temperatures. <i>Physical Review Letters</i> , 2008, 100, 026408. | 7.8 | 40 |
| 10 | Bending Crystals: Emergence of Fractal Dislocation Structures. <i>Physical Review Letters</i> , 2010, 105, 105501. | 7.8 | 39 |
| 11 | Topological phases and topological entropy of two-dimensional systems with finite correlation length. <i>Physical Review B</i> , 2007, 76, . | 3.2 | 36 |
| 12 | Discrete dislocation dynamics simulations of nanoindentation with pre-stress: Hardness and statistics of abrupt plastic events. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 123, 332-347. | 4.8 | 33 |
| 13 | Striped holographic superconductor. <i>Physical Review D</i> , 2011, 83, . | 4.7 | 31 |
| 14 | Scaling theory of continuum dislocation dynamics in three dimensions: Self-organized fractal pattern formation. <i>International Journal of Plasticity</i> , 2013, 46, 94-129. | 8.8 | 31 |
| 15 | Avalanche spatial structure and multivariable scaling functions: Sizes, heights, widths, and views through windows. <i>Physical Review E</i> , 2011, 84, 061103. | 2.1 | 30 |
| 16 | Computational studies of the glass-forming ability of model bulk metallic glasses. <i>Journal of Chemical Physics</i> , 2013, 139, 124503. | 3.0 | 29 |
| 17 | Universality Class of Nanocrystal Plasticity: Localization and Self-Organization in Discrete Dislocation Dynamics. <i>Physical Review Letters</i> , 2019, 122, 178001. | 7.8 | 28 |
| 18 | The origins of Asteroidal rock disaggregation: Interplay of thermal fatigue and microstructure. <i>Icarus</i> , 2018, 304, 172-182. | 2.5 | 27 |

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 19 | Laning and clustering transitions in driven binary active matter systems. <i>Physical Review E</i> , 2018, 98, 022603. | 2.1 | 25 |
| 20 | Effects of Fe atoms on hardening of a nickel matrix: Nanoindentation experiments and atom-scale numerical modeling. <i>Materials and Design</i> , 2022, 217, 110639. | 7.0 | 25 |
| 21 | Devil's staircases, quantum dimer models, and stripe formation in strong coupling models of quantum frustration. <i>Physical Review B</i> , 2007, 75, . | 3.2 | 20 |
| 22 | Nanoindentation of single crystalline Mo: Atomistic defect nucleation and thermomechanical stability. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 826, 141912. | 5.6 | 20 |
| 23 | Materials Informatics for Mechanical Deformation: A Review of Applications and Challenges. <i>Materials</i> , 2021, 14, 5764. | 2.9 | 20 |
| 24 | Probing Microplasticity in Small-Scale FCC Crystals via Dynamic Mechanical Analysis. <i>Physical Review Letters</i> , 2017, 118, 155501. | 7.8 | 18 |
| 25 | Statistical properties of Barkhausen noise in amorphous ferromagnetic films. <i>Physical Review E</i> , 2014, 90, 032821. | 2.1 | 17 |
| 26 | Dielectric Breakdown and Avalanches at Nonequilibrium Metal-Insulator Transitions. <i>Physical Review Letters</i> , 2011, 107, 276401. | 7.8 | 16 |
| 27 | Spatial strain correlations, machine learning, and deformation history in crystal plasticity. <i>Physical Review E</i> , 2019, 99, 053003. | 2.1 | 15 |
| 28 | Learning to Predict Crystal Plasticity at the Nanoscale: Deep Residual Networks and Size Effects in Uniaxial Compression Discrete Dislocation Simulations. <i>Scientific Reports</i> , 2020, 10, 8262. | 3.3 | 14 |
| 29 | First-Order versus Unconventional Phase Transitions in Three-Dimensional Dimer Models. <i>Physical Review Letters</i> , 2010, 104, 045701. | 7.8 | 12 |
| 30 | Universal properties of magnetization dynamics in polycrystalline ferromagnetic films. <i>Physical Review E</i> , 2013, 88, 032811. | 2.1 | 12 |
| 31 | Learning local, quenched disorder in plasticity and other crackling noise phenomena. <i>Npj Computational Materials</i> , 2018, 4, . | 8.7 | 12 |
| 32 | Brittle to quasi-brittle transition and crack initiation precursors in crystals with structural inhomogeneities. <i>Materials Theory</i> , 2019, 3, . | 4.3 | 12 |
| 33 | Shearing a glass and the role of pinning delay in models of interface depinning. <i>Physical Review E</i> , 2016, 93, 032610. | 2.1 | 10 |
| 34 | A Molecular Dynamics Simulations Study of the Influence of Prestrain on the Pop-In Behavior and Indentation Size Effect in Cu Single Crystals. <i>Materials</i> , 2021, 14, 5220. | 2.9 | 10 |
| 35 | Statistics of Frictional Families. <i>Physical Review Letters</i> , 2014, 113, 128302. | 7.8 | 9 |
| 36 | Deep learning based domain knowledge integration for small datasets: Illustrative applications in materials informatics. , 2019, , . | | 9 |

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 37 | Microstructural inelastic fingerprints and data-rich predictions of plasticity and damage in solids. <i>Computational Mechanics</i> , 2020, 66, 141-154. | 4.0 | 9 |
| 38 | Emergence and role of dipolar dislocation patterns in discrete and continuum formulations of plasticity. <i>Physical Review B</i> , 2020, 101, . | 3.2 | 9 |
| 39 | Is Dislocation Flow Turbulent in Deformed Crystals?. <i>Computing in Science and Engineering</i> , 2012, 14, 33-39. | 1.2 | 8 |
| 40 | Shear banding instability in multicomponent metallic glasses: Interplay of composition and short-range order. <i>Physical Review B</i> , 2022, 105, . | 3.2 | 8 |
| 41 | Edge dislocations in multicomponent solid solution alloys: Beyond traditional elastic depinning. <i>Physical Review Research</i> , 2022, 4, . | 3.6 | 8 |
| 42 | Straining topological insulators as a way to detect Majorana fermions. <i>Physical Review B</i> , 2011, 84, . | 3.2 | 7 |
| 43 | Classical Topological Order in Abelian and Non-Abelian Generalized Height Models. <i>Physical Review Letters</i> , 2013, 111, 245701. | 7.8 | 7 |
| 44 | Bending Nanoindentation and Plasticity Noise in FCC Single and Polycrystals. <i>Crystals</i> , 2019, 9, 652. | 2.2 | 7 |
| 45 | Ising nematic fluid phase of hard-core dimers on the square lattice. <i>Physical Review B</i> , 2014, 89, . | 3.2 | 6 |
| 46 | Geometrically projected discrete dislocation dynamics. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2018, 26, 065011. | 2.0 | 6 |
| 47 | From Statistical Correlations to Stochasticity and Size Effects in Sub-Micron Crystal Plasticity. <i>Metals</i> , 2019, 9, 835. | 2.3 | 6 |
| 48 | $\hat{\Gamma}$ -Invariant and Topological Pathways to Influence the Strength of Submicron Crystals. <i>Physical Review Letters</i> , 2020, 124, 205502. | 7.8 | 6 |
| 49 | A Characterization Method for Al Recovery from Dross Based on Compression at Elevated Temperatures. <i>Advances in Tribology</i> , 2011, 2011, 1-5. | 2.1 | 5 |
| 50 | Order and supersymmetry at high filling zero-energy states on the triangular lattice. <i>Physical Review B</i> , 2012, 86, . | 3.2 | 4 |
| 51 | On the shear dilation of polycrystalline lubricant films in boundary lubricated contacts. <i>Journal of Chemical Physics</i> , 2020, 152, 104708. | 3.0 | 4 |
| 52 | Colloidal Shear-Thickening Fluids Using Variable Functional Star-Shaped Particles: A Molecular Dynamics Study. <i>Materials</i> , 2021, 14, 6867. | 2.9 | 4 |
| 53 | Effects of surface curvature and dislocation dynamics: Dynamical deformation mechanisms for uniaxial compression tests at the nanoscale. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2022, 846, 143270. | 5.6 | 4 |
| 54 | Direct detection of plasticity onset through total-strain profile evolution. <i>Physical Review Materials</i> , 2021, 5, . | 2.4 | 2 |

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|----|--|-----|-----------|
| 55 | Nodal-antinodal dichotomy from pairing disorder in d-wave superconductors. Physical Review B, 2010, 82, . | 3.2 | 1 |
| 56 | Irregularization of systems of conservation laws. Materials Theory, 2018, 2, . | 4.3 | 1 |
| 57 | Implications of Criticality in Membrane Bound Processes. Biophysical Journal, 2010, 98, 284a. | 0.5 | 0 |
| 58 | Criticality in Plasma Membranes. Biophysical Journal, 2011, 100, 340a. | 0.5 | 0 |
| 59 | Modelling the Flow of Dynamically Cross-Linked Biopolymer Networks. Biophysical Journal, 2017, 112, 338a. | 0.5 | 0 |
| 60 | Quantum Dimer Models and Exotic Orders. NATO Science for Peace and Security Series B: Physics and Biophysics, 2008, , 139-150. | 0.3 | 0 |