# Karsten Kruse

List of Publications by Year
in descending order



| | | | |
|---|---|---|---|
| 99 papers | 6,980 citations | 61857 43 h-index | 62479 80 g-index |
| 106 all docs | 106 docs citations | 106 times ranked | 4711 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Motor usage imprints microtubule stability along the shaft. Developmental Cell, 2022, 57, 5-18.e8. | 3.1 | 30 |
| 2 | Integer topological defects organize stresses driving tissue morphogenesis. Nature Materials, 2022, 21, 588-597. | 13.3 | 62 |
| 3 | Quantifying Material Properties of Cell Monolayers by Analyzing Integer Topological Defects. Physical Review Letters, 2021, 126, 028101. | 2.9 | 23 |
| 4 | Properties of twisted topological defects in 2D nematic liquid crystals. Soft Matter, 2021, 17, 7408-7417. | 1.2 | 7 |
| 5 | Excitable actin dynamics and amoeboid cell migration. PLoS ONE, 2021, 16, e0246311. | 1.1 | 11 |
| 6 | Pinching the cortex of live cells reveals thickness instabilities caused by myosin II motors. Science Advances, 2021, 7, . | 4.7 | 10 |
| 7 | Integer topological defects of cell monolayers: Mechanics and flows. Physical Review E, 2021, 103, 012405. | 0.8 | 17 |
| 8 | Deterministic actin waves as generators of cell polarization cues. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 826-835. | 3.3 | 39 |
| 9 | Buckling of an Epithelium Growing under Spherical Confinement. Developmental Cell, 2020, 54, 655-668.e6. | 3.1 | 75 |
| 10 | Spontaneous formation of chaotic protrusions in a polymerizing active gel layer. New Journal of Physics, 2020, 22, 013003. | 1.2 | 5 |
| 11 | Accuracy of position determination in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msup><mml:mrow><mml:mi>Ca</mml:mi></mml:mrow><mml:mrow><m Physical Review E, 2019, 100, 022401. | 0.8 | 3 |
| 12 | Positional Information Readout in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msup><mml:mrow><mml:mi>Ca</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn><mm Signaling. Physical Review Letters, 2019, 123, 058102. | 2.9 | 4 |
| 13 | Sound of an axon's growth. Physical Review E, 2019, 99, 050401. | 0.8 | 5 |
| 14 | Nonequilibrium physics in biology. Reviews of Modern Physics, 2019, 91, . | 16.4 | 123 |
| 15 | Aurora A depletion reveals centrosome-independent polarization mechanism in Caenorhabditis elegans. ELife, 2019, 8, . | 2.8 | 56 |
| 16 | Optical control of cytoplasmic flows. Nature Cell Biology, 2018, 20, 227-228. | 4.6 | 4 |
| 17 | The Min-protein oscillations in <i>Escherichia coli</i> : an example of self-organized cellular protein waves. Philosophical Transactions of the Royal Society B: Biological Sciences, 2018, 373, 20170111. | 1.8 | 39 |
| 18 | A calcium optimum for cytotoxic T lymphocyte and natural killer cell cytotoxicity. Journal of Physiology, 2018, 596, 2681-2698. | 1.3 | 64 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | The Science of Living Matter for Tomorrow. Cell Systems, 2018, 6, 400-402. | 2.9 | 5 |
| 20 | FtsZ filaments have the opposite kinetic polarity of microtubules. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 10768-10773. | 3.3 | 41 |
| 21 | Effects of geometry and topography on Min-protein dynamics. PLoS ONE, 2018, 13, e0203050. | 1.1 | 10 |
| 22 | Anomalous percolation features in molecular evolution. Physical Review E, 2018, 98, 022408. | 0.8 | 1 |
| 23 | Active bundles of polar and bipolar filaments. Physical Review E, 2018, 98, 012413. | 0.8 | 5 |
| 24 | Spontaneous buckling of contractile poroelastic actomyosin sheets. Nature Communications, 2018, 9, 2461. | 5.8 | 37 |
| 25 | Intracellular Oscillations and Waves. Annual Review of Condensed Matter Physics, 2017, 8, 239-264. | 5.2 | 70 |
| 26 | Interface between Physics and Biology: Training a New Generation of Creative Bilingual Scientists. Trends in Cell Biology, 2017, 27, 541-543. | 3.6 | 5 |
| 27 | Load Adaptation of Lamellipodial Actin Networks. Cell, 2017, 171, 188-200.e16. | 13.5 | 202 |
| 28 | Making waves. New Journal of Physics, 2017, 19, 011001. | 1.2 | 2 |
| 29 | PKCÎ± diffusion and translocation are independent of an intact cytoskeleton. Scientific Reports, 2017, 7, 475. | 1.6 | 5 |
| 30 | Still and rotating myosin clusters determine cytokinetic ring constriction. Nature Communications, 2016, 7, 11860. | 5.8 | 55 |
| 31 | Actin kinetics shapes cortical network structure and mechanics. Science Advances, 2016, 2, e1501337. | 4.7 | 130 |
| 32 | C2-domain mediated nano-cluster formation increases calcium signaling efficiency. Scientific Reports, 2016, 6, 36028. | 1.6 | 15 |
| 33 | Assembly of bipolar microtubule structures by passive cross-linkers and molecular motors. Physical Review E, 2016, 93, 062415. | 0.8 | 9 |
| 34 | Unbounded growth patterns of reproducing, competing polymersâ€"similarities to biological evolution. New Journal of Physics, 2016, 18, 103003. | 1.2 | 4 |
| 35 | Cell Crawling Driven by Spontaneous Actin Polymerization Waves. Biological and Medical Physics Series, 2016, , 69-93. | 0.3 | 3 |
| 36 | Generation of Stable Overlaps between Antiparallel Filaments. Physical Review Letters, 2015, 115, 118103. | 2.9 | 19 |

| # | Article | IF | Citations |
|---|---|---|---|
| 37 | Segregation of diffusible and directionally moving particles on a polar filament. Physical Review E, 2014, 89, 042713. | 0.8 | 6 |
| 38 | Generation of stationary and moving vortices in active polar fluids in the planar Taylor-Couette geometry. Physical Review E, 2014, 90, 052703. | 0.8 | 8 |
| 39 | Effects of molecular noise on bistable protein distributions in rod-shaped bacteria. Interface Focus, 2014, 4, 20140039. | 1.5 | 8 |
| 40 | Spiral actin-polymerization waves can generate amoeboidal cell crawling. New Journal of Physics, 2014, 16, 055007. | 1.2 | 40 |
| 41 | Effets collectifs des moteurs molÃ©culaires : fonctions biologiques des oscillations mÃ©caniques. , 2014, , 4-9. | 0.1 | 0 |
| 42 | The actin cortex as an active wetting layer. European Physical Journal E, 2013, 36, 52. | 0.7 | 42 |
| 43 | Continuum descriptions of cytoskeletal dynamics. Journal of Nanobiotechnology, 2013, 11, S5. | 4.2 | 0 |
| 44 | Analysis of turnover dynamics of the submembranous actin cortex. Molecular Biology of the Cell, 2013, 24, 757-767. | 0.9 | 181 |
| 45 | Membrane Binding of MinE Allows for a Comprehensive Description of Min-Protein Pattern Formation. PLoS Computational Biology, 2013, 9, e1003347. | 1.5 | 72 |
| 46 | Treadmilling and length distributions of active polar filaments. Journal of Chemical Physics, 2013, 139, 164907. | 1.2 | 18 |
| 47 | The Taylorâ€“Couette motor: spontaneous flows of active polar fluids between two coaxial cylinders. New Journal of Physics, 2012, 14, 023001. | 1.2 | 59 |
| 48 | Length Regulation of Active Biopolymers by Molecular Motors. Physical Review Letters, 2012, 108, 258103. | 2.9 | 58 |
| 49 | Impact of motor molecules on the dynamics of treadmilling filaments. Physical Review E, 2012, 86, 051906. | 0.8 | 8 |
| 50 | Geometry sensing by self-organized protein patterns. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 15283-15288. | 3.3 | 115 |
| 51 | 7.13 Bacterial Organization in Space and Time. , 2012, , 208-221. | | 3 |
| 52 | Protein Self-Organization: Lessons from the Min System. Annual Review of Biophysics, 2011, 40, 315-336. | 4.5 | 124 |
| 53 | Spontaneous Mechanical Oscillations. Current Topics in Developmental Biology, 2011, 95, 67-91. | 1.0 | 24 |
| 54 | Cell Motility Resulting from Spontaneous Polymerization Waves. Physical Review Letters, 2011, 107, 258103. | 2.9 | 72 |

| # | Article | IF | Citations |
|---|---|---|---|
| 55 | Min protein patterns emerge from rapid rebinding and membrane interaction of MinE. Nature Structural and Molecular Biology, 2011, 18, 577-583. | 3.6 | 182 |
| 56 | Self-organization in systems of treadmilling filaments. European Physical Journal E, 2010, 31, 95-104. | 0.7 | 13 |
| 57 | Morphogenetic processes in animals and plants. European Physical Journal E, 2010, 33, 97-97. | 0.7 | 0 |
| 58 | Spontaneous sarcomere dynamics. Chaos, 2010, 20, 045122. | 1.0 | 8 |
| 59 | Intra- and intercellular fluctuations in Min-protein dynamics decrease with cell length. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 6134-6139. | 3.3 | 46 |
| 60 | Filament turnover stabilizes contractile cytoskeletal structures. Europhysics Letters, 2010, 91, 68003. | 0.7 | 11 |
| 61 | The Mechanism of E-Ring Formation During Min Oscillations. Biophysical Journal, 2010, 98, 556a. | 0.2 | 0 |
| 62 | Uncorrelated changes of subunit stability can generate length-dependent disassembly of treadmilling filaments. Physical Biology, 2009, 6, 046016. | 0.8 | 23 |
| 63 | The immunological synapse controls local and global calcium signals in T lymphocytes. Immunological Reviews, 2009, 231, 132-147. | 2.8 | 48 |
| 64 | Spatial Regulators for Bacterial Cell Division Self-Organize into Surface Waves in Vitro. Science, 2008, 320, 789-792. | 6.0 | 499 |
| 65 | A simple self-organized swimmer driven by molecular motors. Europhysics Letters, 2008, 84, 68002. | 0.7 | 25 |
| 66 | Superdiffusion of morphogens by receptor-mediated transport. New Journal of Physics, 2008, 10, 023019. | 1.2 | 12 |
| 67 | Cytoskeletal waves in the absence of molecular motors. Europhysics Letters, 2008, 83, 18003. | 0.7 | 56 |
| 68 | Spontaneous waves in muscle fibres. New Journal of Physics, 2007, 9, 417-417. | 1.2 | 46 |
| 69 | Self-Organization of Treadmilling Filaments. Physical Review Letters, 2007, 99, 228104. | 2.9 | 29 |
| 70 | Morphogen transport in epithelia. Physical Review E, 2007, 75, 011901. | 0.8 | 45 |
| 71 | Surface waves of Min-proteins. Physical Biology, 2007, 4, 38-47. | 0.8 | 15 |
| 72 | Hydrodynamic theory for multi-component active polar gels. New Journal of Physics, 2007, 9, 422-422. | 1.2 | 108 |

| # | Article | IF | Citations |
|---|---|---|---|
| 73 | Stress Generation and Filament Turnover during Actin Ring Constriction. PLoS ONE, 2007, 2, e696. | 1.1 | 99 |
| 74 | Active behavior of the Cytoskeleton. Physics Reports, 2007, 449, 3-28. | 10.3 | 371 |
| 75 | An experimentalist's guide to computational modelling of the Min system. Molecular Microbiology, 2007, 63, 1279-1284. | 1.2 | 77 |
| 76 | Driven Diffusive Systems of Active Filament Bundles. Journal of Statistical Physics, 2007, 128, 95-110. | 0.5 | 3 |
| 77 | Dynamics and mechanics of motor-filament systems. European Physical Journal E, 2006, 20, 459-465. | 0.7 | 12 |
| 78 | Spindle Oscillations during Asymmetric Cell Division Require a Threshold Number of Active Cortical Force Generators. Current Biology, 2006, 16, 2111-2122. | 1.8 | 177 |
| 79 | Mobility of Min-proteins inEscherichia colimeasured by fluorescence correlation spectroscopy. Physical Biology, 2006, 3, 255-263. | 0.8 | 79 |
| 80 | Contractility and retrograde flow in lamellipodium motion. Physical Biology, 2006, 3, 130-137. | 0.8 | 160 |
| 81 | Generic theory of active polar gels: a paradigm for cytoskeletal dynamics. European Physical Journal E, 2005, 16, 5-16. | 0.7 | 441 |
| 82 | Theory of Mitotic Spindle Oscillations. Physical Review Letters, 2005, 94, 108104. | 2.9 | 144 |
| 83 | Oscillations in cell biology. Current Opinion in Cell Biology, 2005, 17, 20-26. | 2.6 | 181 |
| 84 | Continuum Description of the Cytoskeleton: Ring Formation in the Cell Cortex. Physical Review Letters, 2005, 95, 258103. | 2.9 | 49 |
| 85 | Filament Depolymerization by Motor Molecules. Physical Review Letters, 2005, 94, 108102. | 2.9 | 56 |
| 86 | Cellular organization by self-organization. Journal of Cell Biology, 2005, 168, 533-536. | 2.3 | 83 |
| 87 | Min-oscillations inEscherichia coliinduced by interactions of membrane-bound proteins. Physical Biology, 2005, 2, 89-97. | 0.8 | 52 |
| 88 | A Self-Organized Vortex Array of Hydrodynamically Entrained Sperm Cells. Science, 2005, 309, 300-303. | 6.0 | 492 |
| 89 | Robust Formation of Morphogen Gradients. Physical Review Letters, 2005, 94, 018103. | 2.9 | 94 |
| 90 | Asters, Vortices, and Rotating Spirals in Active Gels of Polar Filaments. Physical Review Letters, 2004, 92, 078101. | 2.9 | 499 |

| # | Article | IF | Citations |
|---|---|---|---|
| 91 | Dpp gradient formation by dynamin-dependent endocytosis: receptor trafficking and the diffusion model. Development (Cambridge), 2004, 131, 4843-4856. | 1.2 | 106 |
| 92 | Self-organization and mechanical properties of active filament bundles. Physical Review E, 2003, 67, 051913. | 0.8 | 82 |
| 93 | Continuum theory of contractile fibres. Europhysics Letters, 2003, 64, 716-722. | 0.7 | 34 |
| 94 | Growth of fingerlike protrusions driven by molecular motors. Physical Review E, 2002, 66, 031904. | 0.8 | 34 |
| 95 | A Dynamic Model for Determining the Middle of Escherichia coli. Biophysical Journal, 2002, 82, 618-627. | 0.2 | 152 |
| 96 | Self-Propagating Patterns in Active Filament Bundles. Physical Review Letters, 2001, 87, 138101. | 2.9 | 56 |
| 97 | Bloch Electrons in a Magnetic Field: Why Does Chaos Send Electrons the Hard Way?. Physical Review Letters, 2000, 84, 2929-2932. | 2.9 | 19 |
| 98 | Actively Contracting Bundles of Polar Filaments. Physical Review Letters, 2000, 85, 1778-1781. | 2.9 | 181 |
| 99 | Avoided Band Crossings: Tuning Metal-Insulator Transitions in Chaotic Systems. Physical Review Letters, 1998, 80, 137-140. | 2.9 | 23 |