# Guillaume Charras

List of Publications by Year
in descending order



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|---|---|---|---|
| 101 papers | 12,907 citations | 36303 51 h-index | 31849 101 g-index |
| 119 all docs | 119 docs citations | 119 times ranked | 14248 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Fracture in living tissues. Trends in Cell Biology, 2022, 32, 537-551. | 7.9 | 18 |
| 2 | Spindle reorientation in response to mechanical stress is an emergent property of the spindle positioning mechanisms. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, . | 7.1 | 7 |
| 3 | Learning biophysical determinants of cell fate with deep neural networks. Nature Machine Intelligence, 2022, 4, 636-644. | 16.0 | 14 |
| 4 | L-selectin regulates human neutrophil transendothelial migration. Journal of Cell Science, 2021, 134, . | 2.0 | 24 |
| 5 | Stress fibres and the cortex work in tandem. Nature Materials, 2021, 20, 281-283. | 27.5 | 3 |
| 6 | Cell-scale biophysical determinants of cell competition in epithelia. ELife, 2021, 10, . | 6.0 | 28 |
| 7 | BRAF Modulates Stretch-Induced Intercellular Gap Formation through Localized Actin Reorganization. International Journal of Molecular Sciences, 2021, 22, 8989. | 4.1 | 1 |
| 8 | Automated Deep Lineage Tree Analysis Using a Bayesian Single Cell Tracking Approach. Frontiers in Computer Science, 2021, 3, . | 2.8 | 44 |
| 9 | Extent of myosin penetration within the actin cortex regulates cell surface mechanics. Nature Communications, 2021, 12, 6511. | 12.8 | 26 |
| 10 | Poroelastic osmoregulation of living cell volume. IScience, 2021, 24, 103482. | 4.1 | 3 |
| 11 | Single-cell approaches to cell competition: High-throughput imaging, machine learning and simulations. Seminars in Cancer Biology, 2020, 63, 60-68. | 9.6 | 10 |
| 12 | Actomyosin controls planarity and folding of epithelia in response to compression. Nature Materials, 2020, 19, 109-117. | 27.5 | 60 |
| 13 | F-Actin Interactome Reveals Vimentin as a Key Regulator of Actin Organization and Cell Mechanics in Mitosis. Developmental Cell, 2020, 52, 210-222.e7. | 7.0 | 70 |
| 14 | A unified rheological model for cells and cellularised materials. Royal Society Open Science, 2020, 7, 190920. | 2.4 | 38 |
| 15 | Isotropic myosin-generated tissue tension is required for the dynamic orientation of the mitotic spindle. Molecular Biology of the Cell, 2020, 31, 1370-1379. | 2.1 | 15 |
| 16 | SPIN90 associates with mDia1 and the Arp2/3 complex to regulate cortical actin organization. Nature Cell Biology, 2020, 22, 803-814. | 10.3 | 48 |
| 17 | Mechanics of the cellular actin cortex: From signalling to shape change. Current Opinion in Cell Biology, 2020, 66, 69-78. | 5.4 | 77 |
| 18 | Fractional viscoelastic models for power-law materials. Soft Matter, 2020, 16, 6002-6020. | 2.7 | 178 |

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|---|---|---|---|
| 19 | Tug-of-war between stretching and bending in living cell sheets. Physical Review E, 2020, 102, 012401. | 2.1 | 5 |
| 20 | Curling of epithelial monolayers reveals coupling between active bending and tissue tension. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 9377-9383. | 7.1 | 49 |
| 21 | Cortical cell stiffness is independent of substrate mechanics. Nature Materials, 2020, 19, 1019-1025. | 27.5 | 89 |
| 22 | Polarization of Myosin II Refines Tissue Material Properties to Buffer Mechanical Stress. Developmental Cell, 2019, 48, 245-260.e7. | 7.0 | 68 |
| 23 | Substrate area confinement is a key determinant of cell velocity in collective migration. Nature Physics, 2019, 15, 858-866. | 16.7 | 51 |
| 24 | Stress relaxation in epithelial monolayers is controlled by the actomyosin cortex. Nature Physics, 2019, 15, 839-847. | 16.7 | 126 |
| 25 | A role for actomyosin contractility in Notch signaling. BMC Biology, 2019, 17, 12. | 3.8 | 35 |
| 26 | Tissue stiffening coordinates morphogenesis by triggering collective cell migration in vivo. Nature, 2018, 554, 523-527. | 27.8 | 404 |
| 27 | Tensile Forces and Mechanotransduction at Cellâ€"Cell Junctions. Current Biology, 2018, 28, R445-R457. | 3.9 | 301 |
| 28 | Microfluidic Devices for Examining the Physical Limits of Migration in Confined Environments. Methods in Molecular Biology, 2018, 1749, 375-386. | 0.9 | 1 |
| 29 | Loss of E-cadherin provides tolerance to centrosome amplification in epithelial cancer cells. Journal of Cell Biology, 2018, 217, 195-209. | 5.2 | 59 |
| 30 | Redistribution of Adhesive Forces through Src/FAK Drives Contact Inhibition of Locomotion in Neural Crest. Developmental Cell, 2018, 45, 565-579.e3. | 7.0 | 33 |
| 31 | Optogenetic control of cellular forces and mechanotransduction. Nature Communications, 2017, 8, 14396. | 12.8 | 183 |
| 32 | Self-organizing actin patterns shape membrane architecture but not cell mechanics. Nature Communications, 2017, 8, 14347. | 12.8 | 99 |
| 33 | Liquid crystals in living tissue. Nature, 2017, 544, 164-165. | 27.8 | 18 |
| 34 | Actin cortex architecture regulates cell surface tension. Nature Cell Biology, 2017, 19, 689-697. | 10.3 | 325 |
| 35 | Local cellular neighborhood controls proliferation in cell competition. Molecular Biology of the Cell, 2017, 28, 3215-3228. | 2.1 | 62 |
| 36 | The dynamic mechanical properties of cellularised aggregates. Current Opinion in Cell Biology, 2016, 42, 113-120. | 5.4 | 38 |

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|---|---|---|---|
| 37 | Coordinated control of Notch-Delta signalling and cell cycle progression drives lateral inhibition mediated tissue patterning. Development (Cambridge), 2016, 143, 2305-10. | 2.5 | 48 |
| 38 | Actin kinetics shapes cortical network structure and mechanics. Science Advances, 2016, 2, e1501337. | 10.3 | 130 |
| 39 | Fascin Regulates Nuclear Movement and Deformation in Migrating Cells. Developmental Cell, 2016, 38, 371-383. | 7.0 | 116 |
| 40 | Directional memory arises from long-lived cytoskeletal asymmetries in polarized chemotactic cells. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 1267-1272. | 7.1 | 65 |
| 41 | A question of time: tissue adaptation to mechanical forces. Current Opinion in Cell Biology, 2016, 38, 68-73. | 5.4 | 61 |
| 42 | WASp-dependent actin cytoskeleton stability at the dendritic cell immunological synapse is required for extensive, functional T cell contacts. Journal of Leukocyte Biology, 2016, 99, 699-710. | 3.3 | 54 |
| 43 | A Worldwide Competition to Compare the Speed and Chemotactic Accuracy of Neutrophil-Like Cells. PLoS ONE, 2016, 11, e0154491. | 2.5 | 16 |
| 44 | Immunodeficiency and severe susceptibility to bacterial infection associated with a loss-of-function homozygous mutation of MKL1. Blood, 2015, 126, 1527-1535. | 1.4 | 66 |
| 45 | Hypoxia and loss of <scp>PHD</scp> 2 inactivate stromal fibroblasts to decrease tumour stiffness andÂmetastasis. EMBO Reports, 2015, 16, 1394-1408. | 4.5 | 120 |
| 46 | Cdc42EP3/BORG2 and Septin Network Enables Mechano-transduction and the Emergence of Cancer-Associated Fibroblasts. Cell Reports, 2015, 13, 2699-2714. | 6.4 | 106 |
| 47 | Hydraulic cracking. Nature Materials, 2015, 14, 268-269. | 27.5 | 6 |
| 48 | An open access microfluidic device for the study of the physical limits of cancer cell deformation during migration in confined environments. Microelectronic Engineering, 2015, 144, 42-45. | 2.4 | 29 |
| 49 | Emergence of homeostatic epithelial packing and stress dissipation through divisions oriented along the long cell axis. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 5726-5731. | 7.1 | 176 |
| 50 | Force transmission during adhesion-independent migration. Nature Cell Biology, 2015, 17, 524-529. | 10.3 | 279 |
| 51 | L-selectin shedding is activated specifically within transmigrating pseudopods of monocytes to regulate cell polarity in vitro. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E1461-70. | 7.1 | 54 |
| 52 | Dissecting protein reaction dynamics in living cells by fluorescence recovery after photobleaching. Nature Protocols, 2015, 10, 660-680. | 12.0 | 58 |
| 53 | Nanoscale stiffness topography reveals structure and mechanics of the transport barrier in intact nuclear pore complexes. Nature Nanotechnology, 2015, 10, 60-64. | 31.5 | 57 |
| 54 | Formation of adherens junctions leads to the emergence of a tissue-level tension in epithelial monolayers. Journal of Cell Science, 2014, 127, 2507-17. | 2.0 | 91 |

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|---|---|---|---|
| 55 | Epithelial repair is a two-stage process driven first by dying cells and then by their neighbours. Journal of Cell Science, 2014, 127, 1229-41. | 2.0 | 103 |
| 56 | The toxoplasma-host cell junction is anchored to the cell cortex to sustain parasite invasive force. BMC Biology, 2014, 12, 773. | 3.8 | 35 |
| 57 | A phenomenological density-scaling approach to lamellipodial actin dynamics <sup />. Interface Focus, 2014, 4, 20140006. | 3.0 | 19 |
| 58 | Spatiotemporal control of gene expression using microfluidics. Lab on A Chip, 2014, 14, 1336-1347. | 6.0 | 26 |
| 59 | Physical influences of the extracellular environment on cell migration. Nature Reviews Molecular Cell Biology, 2014, 15, 813-824. | 37.0 | 585 |
| 60 | Cellular Control of Cortical Actin Nucleation. Current Biology, 2014, 24, 1628-1635. | 3.9 | 219 |
| 61 | In vivo collective cell migration requires an LPAR2-dependent increase in tissue fluidity. Journal of Cell Biology, 2014, 206, 113-127. | 5.2 | 125 |
| 62 | Quantitative Analysis of Ezrin Turnover Dynamics in the Actin Cortex. Biophysical Journal, 2014, 106, 343-353. | 0.5 | 48 |
| 63 | Epithelial repair is a two-stage process driven first by dying cells and then by their neighbours. Development (Cambridge), 2014, 141, e0808-e0808. | 2.5 | 0 |
| 64 | Analysis of turnover dynamics of the submembranous actin cortex. Molecular Biology of the Cell, 2013, 24, 757-767. | 2.1 | 181 |
| 65 | The cytoplasm of living cells behaves as a poroelastic material. Nature Materials, 2013, 12, 253-261. | 27.5 | 527 |
| 66 | Mechanotransduction and YAP-dependent matrix remodelling is required for the generation and maintenance of cancer-associated fibroblasts. Nature Cell Biology, 2013, 15, 637-646. | 10.3 | 1,088 |
| 67 | Generating suspended cell monolayers for mechanobiological studies. Nature Protocols, 2013, 8, 2516-2530. | 12.0 | 50 |
| 68 | Mechanisms of leading edge protrusion in interstitial migration. Nature Communications, 2013, 4, 2896. | 12.8 | 91 |
| 69 | Cell cortex composition and homeostasis resolved by integrating proteomics and quantitative imaging. Cytoskeleton, 2013, 70, 741-754. | 2.0 | 76 |
| 70 | Disease-associated missense mutations in the EVH1 domain disrupt intrinsic WASp function causing dysregulated actin dynamics and impaired dendritic cell migration. Blood, 2013, 121, 72-84. | 1.4 | 11 |
| 71 | Excess F-actin mechanically impedes mitosis leading to cytokinesis failure in X-linked neutropenia by exceeding Aurora B kinase error correction capacity. Blood, 2012, 120, 3803-3811. | 1.4 | 42 |
| 72 | Characterizing the mechanics of cultured cell monolayers. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 16449-16454. | 7.1 | 295 |

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|---|---|---|---|
| 73 | The Natural Product Cucurbitacin E Inhibits Depolymerization of Actin Filaments. ACS Chemical Biology, 2012, 7, 1502-1508. | 3.4 | 51 |
| 74 | Actin cortex mechanics and cellular morphogenesis. Trends in Cell Biology, 2012, 22, 536-545. | 7.9 | 695 |
| 75 | Stimulation of Cortical Myosin Phosphorylation by p114RhoGEF Drives Cell Migration and Tumor Cell Invasion. PLoS ONE, 2012, 7, e50188. | 2.5 | 33 |
| 76 | PP1-Mediated Moesin Dephosphorylation Couples Polar Relaxation to Mitotic Exit. Current Biology, 2012, 22, 231-236. | 3.9 | 86 |
| 77 | Experimental validation of atomic force microscopy-based cell elasticity measurements. Nanotechnology, 2011, 22, 345102. | 2.6 | 151 |
| 78 | Deathâ€associated protein kinase (DAPK) and signal transduction: blebbing in programmed cell death. FEBS Journal, 2010, 277, 58-65. | 4.7 | 61 |
| 79 | Interaction with surrounding normal epithelial cells influences signalling pathways and behaviour of Src-transformed cells. Journal of Cell Science, 2010, 123, 171-180. | 2.0 | 175 |
| 80 | Animal cell hydraulics. Journal of Cell Science, 2009, 122, 3233-3241. | 2.0 | 86 |
| 81 | Blebs lead the way: how to migrate without lamellipodia. Nature Reviews Molecular Cell Biology, 2008, 9, 730-736. | 37.0 | 650 |
| 82 | A short history of blebbing. Journal of Microscopy, 2008, 231, 466-478. | 1.8 | 276 |
| 83 | Life and Times of a Cellular Bleb. Biophysical Journal, 2008, 94, 1836-1853. | 0.5 | 393 |
| 84 | Implications of a poroelastic cytoplasm for the dynamics of animal cell shape. Seminars in Cell and Developmental Biology, 2008, 19, 215-223. | 5.0 | 132 |
| 85 | Actin disassembly by cofilin, coronin, and Aip1 occurs in bursts and is inhibited by barbed-end cappers. Journal of Cell Biology, 2008, 182, 341-353. | 5.2 | 161 |
| 86 | Polar stimulation and constrained cell migration in microfluidic channels. Lab on A Chip, 2007, 7, 1783. | 6.0 | 133 |
| 87 | Reassembly of contractile actin cortex in cell blebs. Journal of Cell Biology, 2006, 175, 477-490. | 5.2 | 546 |
| 88 | Screening for Cell Migration Inhibitors via Automated Microscopy Reveals a Rho-Kinase Inhibitor. Chemistry and Biology, 2005, 12, 385-395. | 6.0 | 125 |
| 89 | Non-equilibration of hydrostatic pressure in blebbing cells. Nature, 2005, 435, 365-369. | 27.8 | 547 |
| 90 | Estimating the Sensitivity of Mechanosensitive Ion Channels to Membrane Strain and Tension. Biophysical Journal, 2004, 87, 2870-2884. | 0.5 | 73 |

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|---|---|---|---|
| 91 | Biotechnological Applications of Atomic Force Microscopy. Methods in Cell Biology, 2002, 68, 171-191. | 1.1 | 9 |
| 92 | ANALYSIS OF LIGANDâ€"RECEPTOR INTERACTIONS IN CELLS BY ATOMIC FORCE MICROSCOPY. Journal of Receptor and Signal Transduction Research, 2002, 22, 169-190. | 2.5 | 47 |
| 93 | Determination of Cellular Strains by Combined Atomic Force Microscopy and Finite Element Modeling. Biophysical Journal, 2002, 83, 858-879. | 0.5 | 135 |
| 94 | Single Cell Mechanotransduction and Its Modulation Analyzed by Atomic Force Microscope Indentation. Biophysical Journal, 2002, 82, 2970-2981. | 0.5 | 264 |
| 95 | A Microstructural Finite Element Simulation of Mechanically Induced Bone Formation. Journal of Biomechanical Engineering, 2001, 123, 607-612. | 1.3 | 13 |
| 96 | Atomic force microscopy can be used to mechanically stimulate osteoblasts and evaluate cellular strain distributions. Ultramicroscopy, 2001, 86, 85-95. | 1.9 | 118 |
| 97 | Integration of Atomic Force and Confocal Microscopy. Single Molecules, 2000, 1, 135-137. | 0.9 | 26 |
| 98 | Improving the local solution accuracy of large-scale digital image-based finite element analyses. Journal of Biomechanics, 2000, 33, 255-259. | 2.1 | 57 |
| 99 | Adapting atomic force microscopy for cell biology. Ultramicroscopy, 2000, 82, 289-295. | 1.9 | 138 |
| 100 | New technologies in scanning probe microscopy for studying molecular interactions in cells. Expert Reviews in Molecular Medicine, 2000, 2, 1-19. | 3.9 | 19 |
| 101 | Integration of Atomic Force and Confocal Microscopy. Single Molecules, 2000, 1, 135-137. | 0.9 | 1 |