Pietro Cicuta

List of Publications by Year
in descending order

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136 papers	6,499 citations	81900 39 h-index	85541 71 g-index
152 all docs	152 docs citations	152 times ranked	7586 citing authors

#	Article	IF	Citations
1	Critical Fluctuations in Plasma Membrane Vesicles. ACS Chemical Biology, 2008, 3, 287-293.	3.4	420
2	Line Tensions, Correlation Lengths, and Critical Exponents in Lipid Membranes Near Critical Points. Biophysical Journal, 2008, 95, 236-246.	0.5	305
3	Inflammasome activation causes dual recruitment of NLRC4 and NLRP3 to the same macromolecular complex. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 7403-7408.	7.1	285
4	Diffusion of Liquid Domains in Lipid Bilayer Membranes. Journal of Physical Chemistry B, 2007, 111, 3328-3331.	2.6	247
5	Microrheology: a review of the method and applications. Soft Matter, 2007, 3, 1449.	2.7	238
6	Exploring Automatic Diagnosis of COVID-19 from Crowdsourced Respiratory Sound Data. , 2020, , .		231
7	Shearing or Compressing a Soft Glass in 2D: Time-Concentration Superposition. Physical Review Letters, 2003, 90, 236101.	7.8	158
8	Direct exchange of vitamin B12 is demonstrated by modelling the growth dynamics of algalâ€“bacterial cocultures. ISME Journal, 2014, 8, 1418-1427.	9.8	156
9	Hydrodynamic synchronization of colloidal oscillators. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 7669-7673.	7.1	155
10	A basic swimmer at low Reynolds number. Soft Matter, 2009, 5, 472-476.	2.7	150
11	Phagocytosis Dynamics Depends on Target Shape. Biophysical Journal, 2013, 105, 1143-1150.	0.5	134
12	Microfluidic chemostat for measuring single cell dynamics in bacteria. Lab on A Chip, 2013, 13, 947.	6.0	134
13	Lipopolysaccharide-induced NF-Î°B nuclear translocation is primarily dependent on MyD88, but TNFÎ± expression requires TRIF and MyD88. Scientific Reports, 2017, 7, 1428.	3.3	114
14	Short-time movement of E. coli chromosomal loci depends on coordinate and subcellular localization. Nature Communications, 2013, 4, 3003.	12.8	113
15	The role of mechanical forces in the planar-to-bulk transition in growing Escherichia coli microcolonies. Journal of the Royal Society Interface, 2014, 11, 20140400.	3.4	100
16	Actin polymerization as a key innate immune effector mechanism to control Salmonella infection. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 17588-17593.	7.1	96
17	Robotic microscopy for everyone: the OpenFlexure microscope. Biomedical Optics Express, 2020, 11, 2447.	2.9	95
18	Elastometry of Deflated Capsules: Elastic Moduli from Shape and Wrinkle Analysis. Langmuir, 2013, 29, 12463-12471.	3.5	93

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19	The nonlinear mechanical response of the red blood cell. Physical Biology, 2008, 5, 036007.	1.8	92
20	Annexins: Components of the Calcium and Reactive Oxygen Signaling Network. Plant Physiology, 2010, 152, 1824-1829.	4.8	92
21	Volume and porosity thermal regulation in lipid mesophases by coupling mobile ligands to soft membranes. Nature Communications, 2015, 6, 5948.	12.8	88
22	Viscoelasticity of a protein monolayer from anisotropic surface pressure measurements. European Physical Journal E, 2005, 16, 147-158.	1.6	87
23	Individuality and universality in the growth-division laws of singleE. colicells. Physical Review E, 2016, 93, 012408.	2.1	82
24	Flickering Analysis of Erythrocyte Mechanical Properties: Dependence on Oxygenation Level, Cell Shape, and Hydration Level. Biophysical Journal, 2009, 97, 1606-1615.	0.5	79
25	Single-Cell and Population Transcriptomics Reveal Pan-epithelial Remodeling in Type 2-High Asthma. Cell Reports, 2020, 32, 107872.	6.4	78
26	Optimal Hydrodynamic Synchronization of Colloidal Rotors. Physical Review Letters, 2013, 111, 228103.	7.8	76
27	Persistent super-diffusive motion of Escherichia coli chromosomal loci. Nature Communications, 2014, 5, 3854.	12.8	74
28	Dynamics of Salmonella infection of macrophages at the single cell level. Journal of the Royal Society Interface, 2012, 9, 2696-2707.	3.4	70
29	Red blood cell tension protects against severe malaria in the Dantu blood group. Nature, 2020, 585, 579-583.	27.8	69
30	Granular Character of Particle Rafts. Physical Review Letters, 2009, 102, 138302.	7.8	67
31	Quantitation of Malaria Parasite-Erythrocyte Cell-Cell Interactions Using Optical Tweezers. Biophysical Journal, 2014, 107, 846-853.	0.5	61
32	Perspective: Differential dynamic microscopy extracts multi-scale activity in complex fluids and biological systems. Journal of Chemical Physics, 2017, 147, 110901.	3.0	61
33	Realizing the Physics of Motile Cilia Synchronization with Driven Colloids. Annual Review of Condensed Matter Physics, 2016, 7, 323-348.	14.5	60
34	Studies of a weak polyampholyte at the airâ€“buffer interface: The effect of varyingpH and ionic strength. Journal of Chemical Physics, 2001, 114, 8659-8670.	3.0	58
35	Physical descriptions of the bacterial nucleoid at large scales, and their biological implications. Reports on Progress in Physics, 2012, 75, 076602.	20.1	58
36	Compression and shear surface rheology in spread layers of Î²-casein and Î²-lactoglobulin. Journal of Colloid and Interface Science, 2007, 308, 93-99.	9.4	57

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37	Assessing the Collective Dynamics of Motile Cilia in Cultures of Human Airway Cells by Multiscale DDM. Biophysical Journal, 2017, 113, 109-119.	0.5	55
38	Red blood cell dynamics: from spontaneous fluctuations to non-linear response. Soft Matter, 2011, 7, 2042-2051.	2.7	52
39	Synergistic malaria vaccine combinations identified by systematic antigen screening. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 12045-12050.	7.1	49
40	Exploring Automatic COVID-19 Diagnosis via Voice and Symptoms from Crowdsourced Data. , 2021, , .		49
41	Sounds of COVID-19: exploring realistic performance of audio-based digital testing. Npj Digital Medicine, 2022, 5, 16.	10.9	48
42	Recent developments of surface light scattering as a tool for optical-rheology of polymer monolayers. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2004, 233, 97-107.	4.7	47
43	Crystallization of Amphiphilic DNA C-Stars. Nano Letters, 2017, 17, 3276-3281.	9.1	45
44	On the measurement of the surface pressure in Langmuir films with finite shear elasticity. Soft Matter, 2011, 7, 2530.	2.7	40
45	Direct measurement of DNA-mediated adhesion between lipid bilayers. Physical Chemistry Chemical Physics, 2015, 17, 15615-15628.	2.8	40
46	Thermophoretic migration of vesicles depends on mean temperature and head group chemistry. Nature Communications, 2017, 8, 15351.	12.8	39
47	Amphiphilic-DNA Platform for the Design of Crystalline Frameworks with Programmable Structure and Functionality. Journal of the American Chemical Society, 2018, 140, 15384-15392.	13.7	39
48	Tuning Interfacial Properties and Processes by Controlling the Rheology and Structure of Poly(N-isopropylacrylamide) Particles at Air/Water Interfaces. Langmuir, 2018, 34, 7067-7076.	3.5	39
49	Programmable interactions with biomimetic DNA linkers at fluid membranes and interfaces. Reports on Progress in Physics, 2019, 82, 116601.	20.1	39
50	Surface Rheology of a Polymer Monolayer: Effects of Polymer Chain Length and Compression Rate. Langmuir, 2009, 25, 7457-7464.	3.5	36
51	Giant thermophoresis of poly(N-isopropylacrylamide) microgel particles. Soft Matter, 2012, 8, 5857.	2.7	36
52	Entrainment of mammalian motile cilia in the brain with hydrodynamic forces. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 8315-8325.	7.1	35
53	Driving Potential and Noise Level Determine the Synchronization State of Hydrodynamically Coupled Oscillators. Physical Review Letters, 2012, 109, 164103.	7.8	32
54	Influence of High Pressure on the Bending Rigidity of Model Membranes. Journal of Physical Chemistry B, 2015, 119, 9805-9810.	2.6	32

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55	Phenotyping ciliary dynamics and coordination in response to CFTR-modulators in Cystic Fibrosis respiratory epithelial cells. Nature Communications, 2019, 10, 1763.	12.8	31
56	Threshold accumulation of a constitutive protein explains E. coli cell-division behavior in nutrient upshifts. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	31
57	Melting transition in lipid vesicles functionalised by mobile DNA linkers. Soft Matter, 2016, 12, 7804-7817.	2.7	30
58	Membrane Adhesion through Bridging by Multimeric Ligands. Langmuir, 2017, 33, 1139-1146.	3.5	30
59	Responsive core-shell DNA particles trigger lipid-membrane disruption and bacteria entrapment. Nature Communications, 2021, 12, 4743.	12.8	30
60	An Automated Live Imaging Platform for Studying Merozoite Egress-Invasion in Malaria Cultures. Biophysical Journal, 2013, 104, 997-1005.	0.5	29
61	Thermally Driven Membrane Phase Transitions Enable Content Reshuffling in Primitive Cells. Journal of the American Chemical Society, 2021, 143, 16589-16598.	13.7	29
62	The role of optical projection in the analysis of membrane fluctuations. Soft Matter, 2017, 13, 3480-3483.	2.7	28
63	Biophotonic techniques for the study of malaria-infected red blood cells. Medical and Biological Engineering and Computing, 2010, 48, 1055-1063.	2.8	27
64	A Modular, Dynamic, DNA-Based Platform for Regulating Cargo Distribution and Transport between Lipid Domains. Nano Letters, 2021, 21, 2800-2808.	9.1	27
65	Microfluidic production of monodisperse functional o/w droplets and study of their reversible pH dependent aggregation behavior. Soft Matter, 2011, 7, 4214.	2.7	25
66	Long-range interactions, wobbles, and phase defects in chains of model cilia. Physical Review Fluids, 2016, 1, 081201.	2.5	25
67	Noise and Synchronization of a Single Active Colloid. Physical Review Letters, 2011, 107, 094101.	7.8	24
68	Hydrodynamically synchronized states in active colloidal arrays. Soft Matter, 2012, 8, 8672.	2.7	24
69	On the relation between hierarchical morphology and mechanical properties of a colloidal 2D gel system. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2012, 413, 71-77.	4.7	24
70	Amphiphilic DNA nanostructures for bottom-up synthetic biology. Chemical Communications, 2021, 57, 12725-12740.	4.1	24
71	The frequency and duration of Salmonella â€“macrophage adhesion events determines infection efficiency. Philosophical Transactions of the Royal Society B: Biological Sciences, 2015, 370, 20140033.	4.0	23
72	Scaling of dynamics in 2d semi-dilute polymer solutions. Europhysics Letters, 2004, 68, 65-71.	2.0	22

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73	Hydrodynamic coupling in polygonal arrays of colloids: Experimental and analytical results. Physical Review E, 2010, 81, 051403.	2.1	22
74	Interaction between colloidal particles on an oilâ€“water interface in dilute and dense phases. Journal of Physics Condensed Matter, 2015, 27, 194119.	1.8	22
75	Floating and Sinking of a Pair of Spheres at a Liquidâ€“Fluid Interface. Langmuir, 2017, 33, 1427-1436.	3.5	22
76	Equilibrium and nonequilibrium fluctuations at the interface between two fluid phases. Physical Review E, 2000, 62, 4920-4926.	2.1	21
77	Capillary-to-bulk crossover of nonequilibrium fluctuations in the free diffusion of a near-critical binary liquid mixture. Applied Optics, 2001, 40, 4140.	2.1	21
78	Shear and compression viscoelasticity in polymer monolayers. Journal of Physics Condensed Matter, 2005, 17, S3445-S3453.	1.8	21
79	Optical trapping of colloidal particles and cells by focused evanescent fields using conical lenses. Optics Express, 2010, 18, 7076.	3.4	21
80	Collective synchronization states in arrays of driven colloidal oscillators. New Journal of Physics, 2012, 14, 105023.	2.9	21
81	Control of synchronization in models of hydrodynamically coupled motile cilia. Communications Physics, 2018, 1, .	5.3	21
82	The capillary interaction between two vertical cylinders. Journal of Physics Condensed Matter, 2012, 24, 284104.	1.8	20
83	Membrane Scaffolds Enhance the Responsiveness and Stability of DNA-Based Sensing Circuits. Bioconjugate Chemistry, 2019, 30, 1850-1859.	3.6	20
84	The use of biophysical approaches to understand ciliary beating. Biochemical Society Transactions, 2020, 48, 221-229.	3.4	19
85	Patterns of synchronization in the hydrodynamic coupling of active colloids. Physical Review E, 2012, 85, 016203.	2.1	18
86	A viscoelastic regime in dilute hydrophobin monolayers. Soft Matter, 2012, 8, 1175-1183.	2.7	18
87	Self-assembly of repulsive interfacial particles via collective sinking. Soft Matter, 2017, 13, 212-221.	2.7	18
88	Endothelial glycocalyx regulates cytoadherence in Plasmodium falciparum malaria. Journal of the Royal Society Interface, 2018, 15, 20180773.	3.4	18
89	Evidence against a Role of Elevated Intracellular Ca2+ during Plasmodium falciparum Preinvasion. Biophysical Journal, 2018, 114, 1695-1706.	0.5	17
90	Quantitative High-Speed Video Profiling Discriminates between DNAH11 and HYDIN Variants of Primary Ciliary Dyskinesia. American Journal of Respiratory and Critical Care Medicine, 2019, 199, 1436-1438.	5.6	17

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91	Mechanical properties of ternary lipid membranes near a liquidâ€“liquid phase separation boundary. Journal of Physics Condensed Matter, 2010, 22, 062101.	1.8	16
92	Role of growth rate on the orientational alignment of Escherichia coli in a slit. Royal Society Open Science, 2017, 4, 170463.	2.4	16
93	Exploring Longitudinal Cough, Breath, and Voice Data for COVID-19 Progression Prediction via Sequential Deep Learning: Model Development and Validation. Journal of Medical Internet Research, 2022, 24, e37004.	4.3	16
94	Relaxation kinetics of stretched disclination lines in a nematic liquid crystal. Physical Review E, 2010, 81, 061701.	2.1	15
95	Subdiffusion of loci and cytoplasmic particles are different in compressed Escherichia coli cells. Communications Biology, 2018, 1, 176.	4.4	15
96	Criticality of plasma membrane lipids reflects activation state of macrophage cells. Journal of the Royal Society Interface, 2020, 17, 20190803.	3.4	15
97	Motile cilia hydrodynamics: entrainment versus synchronization when coupling through flow. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190152.	4.0	15
98	Active rheology of phospholipid vesicles. Physical Review E, 2011, 84, 021930.	2.1	14
99	Wrinkling in the deflation of elastic bubbles. European Physical Journal E, 2013, 36, 22.	1.6	14
100	Correlation between crystalline order and vitrification in colloidal monolayers. Journal of Physics Condensed Matter, 2015, 27, 194124.	1.8	14
101	Kinetics of Nanoparticleâ€“Membrane Adhesion Mediated by Multivalent Interactions. Langmuir, 2019, 35, 2002-2012.	3.5	13
102	Post-replicative pairing of sister ter regions in Escherichia coli involves multiple activities of MatP. Nature Communications, 2020, 11, 3796.	12.8	13
103	Cytosolic Crowding Drives the Dynamics of Both Genome and Cytosol in Escherichia coli Challenged with Sub-lethal Antibiotic Treatments. IScience, 2020, 23, 101560.	4.1	13
104	Soft pinning of liquid domains on topographical hemispherical caps. Chemistry and Physics of Lipids, 2015, 185, 78-87.	3.2	12
105	Directed tubule growth from giant unilamellar vesicles in a thermal gradient. Soft Matter, 2019, 15, 1676-1683.	2.7	11
106	Minimal two-sphere model of the generation of fluid flow at low Reynolds numbers. Physical Review E, 2010, 81, 036304.	2.1	10
107	Thermal-driven domain and cargo transport in lipid membranes. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 846-851.	7.1	10
108	Cilia density and flow velocity affect alignment of motile cilia from brain cells. Journal of Experimental Biology, 2020, 223, .	1.7	10

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109	Emergence of polar order and cooperativity in hydrodynamically coupled model cilia. Journal of the Royal Society Interface, 2013, 10, 20130571.	3.4	9
110	Bacterial nucleoid structure probed by active drag and resistive pulse sensing. Integrative Biology (United Kingdom), 2014, 6, 184-191.	1.3	9
111	Interaction with prefibrillar species and amyloid-like fibrils changes the stiffness of lipid bilayers. Physical Chemistry Chemical Physics, 2017, 19, 27930-27934.	2.8	9
112	Photocontrol of protein conformation in a Langmuir monolayer. Journal of Chemical Physics, 2001, 115, 9991-9994.	3.0	8
113	Both genome and cytosol dynamics change in E. coli challenged with sublethal rifampicin. Physical Biology, 2017, 14, 015005.	1.8	8
114	The chimera state in colloidal phase oscillators with hydrodynamic interaction. Chaos, 2017, 27, 123108.	2.5	7
115	Adaptable DNA interactions regulate surface triggered self assembly. Nanoscale, 2020, 12, 18616-18620.	5.6	7
116	Direct measurement of unsteady microscale Stokes flow using optically driven microspheres. Physical Review Fluids, 2021, 6, .	2.5	7
117	The erythrocyte membrane properties of beta thalassaemia heterozygotes and their consequences for Plasmodium falciparum invasion. Scientific Reports, 2022, 12, .	3.3	7
118	Dynamic light scattering from colloidal fractal monolayers. Physical Review E, 2002, 65, 041404.	2.1	6
119	Critical Lipidomics: The Consequences of Lipid Miscibility in Biological Membranes. , 2018, , 141-168.		6
120	Looking for the glass transition in a single molecular layer on the water surface. Journal of Physics Condensed Matter, 2003, 15, S1031-S1040.	1.8	5
121	Interpreting the synchronisation of driven colloidal oscillators via the mean pair interaction. New Journal of Physics, 2018, 20, 093028.	2.9	4
122	Changes in geometrical aspects of a simple model of cilia synchronization control the dynamical state, a possible mechanism for switching of swimming gaits in microswimmers. PLoS ONE, 2021, 16, e0249060.	2.5	3
123	Biophysical Tools and Concepts Enable Understanding of Asexual Blood Stage Malaria. Frontiers in Cellular and Infection Microbiology, 2022, 12, .	3.9	3
124	Fast and reversible microscale formation of columns in carbon nanotube suspensions. Soft Matter, 2013, 9, 235-240.	2.7	2
125	autohaem: 3D printed devices for automated preparation of blood smears. Review of Scientific Instruments, 2022, 93, 014104.	1.3	2
126	Investigating hydrodynamic synchronisation using holographic optical tweezers. Proceedings of SPIE, 2014, , .	0.8	1

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127	Advances in single-cell experimental design made possible by automated imaging platforms with feedback through segmentation. Methods in Cell Biology, 2015, 125, 471-488.	1.1	1
128	Emergence of Collective Dynamics in Systems of Motile Cilia. Biophysical Journal, 2014, 106, 243a.	0.5	0
129	Non-Equilibrium Phase Behaviour in Giant Lipid Vesicles Following Very Rapid Temperature Changes. Biophysical Journal, 2014, 106, 83a.	0.5	0
130	Short-Time Dynamics E. Coli Chromosomal Loci Reveal a Dependence on Coordinate and Indicate the Presence of a Sporadic but Ubiquitous Super-Diffusive Motion. Biophysical Journal, 2014, 106, 78a.	0.5	0
131	Single Cell Measurements of Intracellular Signalling, and Motility, in Macrophage Cells Sensing a Bacterial Infection. Biophysical Journal, 2014, 106, 787a.	0.5	0
132	Bacterial Chromosome Dynamics by Locus Tracking in Fluorescence Microscopy. Methods in Molecular Biology, 2016, 1431, 161-173.	0.9	0
133	Helpful disorder in the lungs. Nature Physics, 2020, 16, 903-904.	16.7	0
134	TBA. , 2011, , .		0
135	Critical Fluctuations in Lipid Mixtures. , 2013, , 387-390.		0
136	Remote teaching data-driven physical modeling through a COVID-19 open-ended data challenge.. European Journal of Physics, 0, , .	0.6	0