Luca Giomi

List of Publications by Year
in descending order

58 papers	3,087 citations	186265 28 h-index	161849 54 g-index
62 all docs	62 docs citations	62 times ranked	2130 citing authors

#	Article	IF	Citations
1	Topology and dynamics of active nematic vesicles. Science, 2014, 345, 1135-1139.	12.6	450
2	Two-dimensional matter: order, curvature and defects. Advances in Physics, 2009, 58, 449-563.	14.4	287
3	Defect Annihilation and Proliferation in Active Nematics. Physical Review Letters, 2013, 110, 228101.	7.8	250
4	Defect dynamics in active nematics. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20130365.	3.4	170
5	Sheared active fluids: Thickening, thinning, and vanishing viscosity. Physical Review E, 2010, 81, 051908.	2.1	117
6	Geometry and Topology of Turbulence in Active Nematics. Physical Review X, 2015, 5, .	8.9	108
7	Turbulent Dynamics of Epithelial Cell Cultures. Physical Review Letters, 2018, 120, 208101.	7.8	107
8	Spontaneous Division and Motility in Active Nematic Droplets. Physical Review Letters, 2014, 112, 147802.	7.8	101
9	Excitable Patterns in Active Nematics. Physical Review Letters, 2011, 106, 218101.	7.8	100
10	Complex Spontaneous Flows and Concentration Banding in Active Polar Films. Physical Review Letters, 2008, 101, 198101.	7.8	97
11	Curvature-induced defect unbinding and dynamics in active nematic toroids. Nature Physics, 2018, 14, 85-90.	16.7	93
12	Swarming, swirling and stasis in sequestered bristle-bots. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20120637.	2.1	92
13	Banding, excitability and chaos in active nematic suspensions. Nonlinearity, 2012, 25, 2245-2269.	1.4	76
14	Orientational properties of nematic disclinations. Soft Matter, 2016, 12, 6490-6495.	2.7	67
15	The dynamics of sperm cooperation in a competitive environment. Proceedings of the Royal Society B: Biological Sciences, 2014, 281, 20140296.	2.6	60
16	Statistical properties of autonomous flows in 2D active nematics. Soft Matter, 2019, 15, 3264-3272.	2.7	53
17	Cross-talk between topological defects in different fields revealed by nematic microfluidics. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E5771-E5777.	7.1	52
18	Minimal surfaces bounded by elastic lines. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 1851-1864.	2.1	49

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19	Crystalline order on Riemannian manifolds with variable Gaussian curvature and boundary. Physical Review B, 2007, 76, .	3.2	42
20	Polar patterns in active fluids. Soft Matter, 2012, 8, 129-139.	2.7	41
21	Theory of defect-mediated morphogenesis. Science Advances, 2022, 8, eabk2712.	10.3	41
22	Statistical Mechanics of Developable Ribbons. Physical Review Letters, 2010, 104, 238104.	7.8	39
23	On shape dependence of holographic mutual information in AdS4. Journal of High Energy Physics, 2015, 2015, 1.	4.7	38
24	Geometry and Mechanics of Microdomains in Growing Bacterial Colonies. Physical Review X, 2018, 8, .	8.9	37
25	Geometrical Control of Active Turbulence in Curved Topographies. Physical Review Letters, 2019, 122, 168002.	7.8	34
26	Multi-stability of free spontaneously curved anisotropic strips. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 511-530.	2.1	30
27	Mechanical interplay between cell shape and actin cytoskeleton organization. Soft Matter, 2020, 16, 6328-6343.	2.7	30
28	Defective ground states of toroidal crystals. Physical Review E, 2008, 78, 010601.	2.1	29
29	Bubble-raft model for a paraboloidal crystal. Physical Review E, 2008, 77, 021602.	2.1	29
30	Mono- to Multilayer Transition in Growing Bacterial Colonies. Physical Review Letters, 2019, 123, 178001.	7.8	28
31	Pak3 inhibits local actin filament formation to regulate global cell polarity. HFSP Journal, 2009, 3, 194-203.	2.5	26
32	Confinement-induced self-organization in growing bacterial colonies. Science Advances, 2021, 7, .	10.3	26
33	Topotaxis of active Brownian particles. Physical Review E, 2020, 101, 032602.	2.1	23
34	Faceting and Flattening of Emulsion Droplets: A Mechanical Model. Physical Review Letters, 2021, 126, 038001.	7.8	22
35	Elastic theory of defects in toroidal crystals. European Physical Journal E, 2008, 27, 275-296.	1.6	18
36	The mean-field infinite range p = 3 spin glass: Equilibrium landscape and correlation time scales. Europhysics Letters, 2005, 71, 824-830.	2.0	17

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37	Cytoskeletal Anisotropy Controls Geometry and Forces of Adherent Cells. Physical Review Letters, 2018, 121, 178101.	7.8	17
38	Geometric pinning and antimixing in scaffolded lipid vesicles. Nature Communications, 2020, 11, 4314.	12.8	17
39	Softly constrained films. Soft Matter, 2013, 9, 8121.	2.7	16
40	Cellular geometry controls the efficiency of motile sperm aggregates. Journal of the Royal Society Interface, 2018, 15, 20180702.	3.4	16
41	Chiral stresses in nematic cell monolayers. Soft Matter, 2020, 16, 764-774.	2.7	15
42	Interface geometry of binary mixtures on curved substrates. Physical Review E, 2018, 98, .	2.1	14
43	Orientational Correlations in Active and Passive Nematic Defects. Physical Review Letters, 2021, 127, 197801.	7.8	14
44	Polymorphism and bistability in adherent cells. Soft Matter, 2013, 9, 5251.	2.7	13
45	Hyperbolic Interfaces. Physical Review Letters, 2012, 109, 136101.	7.8	12
46	Linear response to leadership, effective temperature, and decision making in flocks. Physical Review E, 2016, 94, 022612.	2.1	12
47	Self-regulation of phenotypic noise synchronizes emergent organization and active transport in confluent microbial environments. Nature Physics, 2022, 18, 945-951.	16.7	9
48	Dislocation screening in crystals with spherical topology. Physical Review E, 2020, 101, 063005.	2.1	8
49	Topology-Driven Ordering of Flocking Matter. Physical Review X, 2021, 11, .	8.9	8
50	Thermodynamic equilibrium of binary mixtures on curved surfaces. Physical Review E, 2019, 100, 032604.	2.1	7
51	Molecular tilt on monolayer-protected nanoparticles. Europhysics Letters, 2012, 97, 36005.	2.0	6
52	One ring to rule them all: tuning bacteria collective motion via geometric confinement. New Journal of Physics, 2016, 18, 081001.	2.9	3
53	Measuring Gaussian Rigidity Using Curved Substrates. Physical Review Letters, 2020, 125, 188002.	7.8	3
54	GarcÃa-Aguilar etÂal. Reply:. Physical Review Letters, 2021, 126, 259802.	7.8	3

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55	Contour Models of Cellular Adhesion. Advances in Experimental Medicine and Biology, 2019, 1146, 13-29.	1.6	3
56	Giomi and Mahadevan Reply:. Physical Review Letters, 2011, 107, .	7.8	2
57	Paraboloidal crystals. Chaos, 2007, 17, 041104.	2.5	1
58	Lipid exchange enhances geometric pinning in multicomponent membranes on patterned substrates. Soft Matter, 2020, 16, 4932-4940.	2.7	0