

Nicholas T Ouellette

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

114
papers

2,765
citations

30
h-index

48
g-index

127
ext. papers

3,334
ext. citations

4.9
avg, IF

5.68
L-index

#	Paper	IF	Citations
114	A physics perspective on collective animal behavior.. <i>Physical Biology</i> , 2022 ,	3	3
113	Formation and dissolution of midge swarms.. <i>Physical Review E</i> , 2022 , 105, 034601	2.4	0
112	Stochastic modelling of bird flocks: accounting for the cohesiveness of collective motion.. <i>Journal of the Royal Society Interface</i> , 2022 , 19, 20210745	4.1	0
111	Goals and Limitations of Modeling Collective Behavior in Biological Systems. <i>Frontiers in Physics</i> , 2021 , 9,	3.9	5
110	Automated identification of urban substructure for comparative analysis. <i>PLoS ONE</i> , 2021 , 16, e0245067	3.7	1
109	Shear response of granular packings compressed above jamming onset. <i>Physical Review E</i> , 2021 , 103, 022902	2.4	3
108	An equation of state for insect swarms. <i>Scientific Reports</i> , 2021 , 11, 3773	4.9	3
107	Assessing the information content of complex flows. <i>Physical Review E</i> , 2021 , 103, 023301	2.4	0
106	Synergistic interactions among growing stressors increase risk to an Arctic ecosystem. <i>Nature Communications</i> , 2020 , 11, 6255	17.4	6
105	Environmental perturbations induce correlations in midge swarms. <i>Journal of the Royal Society Interface</i> , 2020 , 17, 20200018	4.1	11
104	Interaction between an inclined gravity current and a pycnocline in a two-layer stratification. <i>Journal of Fluid Mechanics</i> , 2020 , 887,	3.7	2
103	Geometric constraints on energy transfer in the turbulent cascade. <i>Physical Review Fluids</i> , 2020 , 5,	2.8	2
102	Temporal dynamics of the alignment of the turbulent stress and strain rate. <i>Physical Review Fluids</i> , 2020 , 5,	2.8	3
101	Settling of inertial nonspherical particles in wavy flow. <i>Physical Review Fluids</i> , 2020 , 5,	2.8	2
100	Similarities between insect swarms and isothermal globular clusters. <i>Physical Review Research</i> , 2020 , 2,	3.9	5
99	Disentangling resolution, precision, and inherent stochasticity in nonlinear systems. <i>Physical Review Research</i> , 2020 , 2,	3.9	3
98	On the surface expression of bottom features in free-surface flow. <i>Journal of Fluid Mechanics</i> , 2020 , 900,	3.7	1

97	Pair formation in insect swarms driven by adaptive long-range interactions. <i>Journal of the Royal Society Interface</i> , 2020 , 17, 20200367	4.1	2
96	Comparison of shear and compression jammed packings of frictional disks. <i>Granular Matter</i> , 2019 , 21, 1	2.6	4
95	The Most Active Matter of All. <i>Matter</i> , 2019 , 1, 297-299	12.7	9
94	Costs and benefits of social relationships in the collective motion of bird flocks. <i>Nature Ecology and Evolution</i> , 2019 , 3, 943-948	12.3	31
93	Response of insect swarms to dynamic illumination perturbations. <i>Journal of the Royal Society Interface</i> , 2019 , 16, 20180739	4.1	16
92	Mechanical spectroscopy of insect swarms. <i>Science Advances</i> , 2019 , 5, eaaw9305	14.3	20
91	Interaction of a downslope gravity current with an internal wave. <i>Journal of Fluid Mechanics</i> , 2019 , 873, 889-913	3.7	1
90	Local interactions and their group-level consequences in flocking jackdaws. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2019 , 286, 20190865	4.4	17
89	Collective turns in jackdaw flocks: kinematics and information transfer. <i>Journal of the Royal Society Interface</i> , 2019 , 16, 20190450	4.1	14
88	Nonlinear dynamics captures brain states at different levels of consciousness in patients anesthetized with propofol. <i>PLoS ONE</i> , 2019 , 14, e0223921	3.7	8
87	Behavioural plasticity and the transition to order in jackdaw flocks. <i>Nature Communications</i> , 2019 , 10, 5174	17.4	28
86	Local linearity, coherent structures, and scale-to-scale coupling in turbulent flow. <i>Physical Review Fluids</i> , 2019 , 4,	2.8	4
85	Orientation dynamics of nonspherical particles under surface gravity waves. <i>Physical Review Fluids</i> , 2019 , 4,	2.8	7
84	Three-dimensional time-resolved trajectories from laboratory insect swarms. <i>Scientific Data</i> , 2019 , 6,	8.2	13
83	Flowing crowds. <i>Science</i> , 2019 , 363, 27-28	33.3	7
82	Influence of lateral boundaries on transport in quasi-two-dimensional flow. <i>Chaos</i> , 2018 , 28, 023113	3.3	2
81	Generalized Lagrangian coherent structures. <i>Physica D: Nonlinear Phenomena</i> , 2018 , 372, 31-51	3.3	32
80	Transport of anisotropic particles under waves. <i>Journal of Fluid Mechanics</i> , 2018 , 837, 320-340	3.7	20

79	Remifentanil and Nitrous Oxide Anesthesia Produces a Unique Pattern of EEG Activity During Loss and Recovery of Response. <i>Frontiers in Human Neuroscience</i> , 2018 , 12, 173	3.3	7
78	Critical scaling near the yielding transition in granular media. <i>Physical Review E</i> , 2018 , 97, 062901	2.4	23
77	Tensor geometry in the turbulent cascade. <i>Journal of Fluid Mechanics</i> , 2018 , 835, 1048-1064	3.7	13
76	Shoaling internal waves may reduce gravity current transport. <i>Environmental Fluid Mechanics</i> , 2018 , 18, 383-394	2.2	5
75	Do Complexity Measures of Frontal EEG Distinguish Loss of Consciousness in Geriatric Patients Under Anesthesia?. <i>Frontiers in Neuroscience</i> , 2018 , 12, 645	5.1	13
74	Simultaneous measurements of three-dimensional trajectories and wingbeat frequencies of birds in the field. <i>Journal of the Royal Society Interface</i> , 2018 , 15,	4.1	14
73	Preferential orientation of spheroidal particles in wavy flow. <i>Journal of Fluid Mechanics</i> , 2018 , 856, 850-869	3.5	6
72	Are midge swarms bound together by an effective velocity-dependent gravity?. <i>European Physical Journal E</i> , 2017 , 40, 46	1.5	18
71	Characterizing free-surface expressions of flow instabilities by tracking submerged features. <i>Experiments in Fluids</i> , 2017 , 58, 1	2.5	5
70	Phase Coexistence in Insect Swarms. <i>Physical Review Letters</i> , 2017 , 119, 178003	7.4	28
69	Multiple stages of decay in two-dimensional turbulence. <i>Physics of Fluids</i> , 2017 , 29, 111105	4.4	7
68	Role of grain dynamics in determining the onset of sediment transport. <i>Physical Review Fluids</i> , 2017 , 2,	2.8	17
67	Determining the onset of hydrodynamic erosion in turbulent flow. <i>Physical Review Fluids</i> , 2017 , 2,	2.8	7
66	Concentration effects on turbulence in dilute polymer solutions far from walls. <i>Physical Review E</i> , 2016 , 93, 063116	2.4	4
65	Swarm dynamics may give rise to Lévy flights. <i>Scientific Reports</i> , 2016 , 6, 30515	4.9	26
64	Mixing and sink effects of air purifiers on indoor PM2.5 concentrations: A pilot study of eight residential homes in Fresno, California. <i>Aerosol Science and Technology</i> , 2016 , 50, 835-845	3.4	12
63	Stretching and folding in finite time. <i>Chaos</i> , 2016 , 26, 023112	3.3	7
62	Correlating Lagrangian structures with forcing in two-dimensional flow. <i>Physics of Fluids</i> , 2016 , 28, 015105	1.4	5

61	Inference of Causal Information Flow in Collective Animal Behavior. <i>IEEE Transactions on Molecular, Biological, and Multi-Scale Communications</i> , 2016 , 2, 107-116	2.3	25
60	Long-range acoustic interactions in insect swarms: an adaptive gravity model. <i>New Journal of Physics</i> , 2016 , 18, 073042	2.9	35
59	Hyperbolic neighbourhoods as organizers of finite-time exponential stretching. <i>Journal of Fluid Mechanics</i> , 2016 , 807, 509-545	3.7	16
58	Advection and the Efficiency of Spectral Energy Transfer in Two-Dimensional Turbulence. <i>Physical Review Letters</i> , 2016 , 117, 104501	7.4	12
57	On the tensile strength of insect swarms. <i>Physical Biology</i> , 2016 , 13, 045002	3	22
56	Empirical questions for collective-behaviour modelling 2015 , 84, 353-363		7
55	Measurements of the coupling between the tumbling of rods and the velocity gradient tensor in turbulence. <i>Journal of Fluid Mechanics</i> , 2015 , 766, 202-225	3.7	47
54	Optimal directional volatile transport in retronasal olfaction. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 14700-4	11.5	19
53	Correlations between the instantaneous velocity gradient and the evolution of scale-to-scale fluxes in two-dimensional flow. <i>Physical Review E</i> , 2015 , 92, 033017	2.4	1
52	Onset and cessation of motion in hydrodynamically sheared granular beds. <i>Physical Review E</i> , 2015 , 92, 042202	2.4	29
51	Intrinsic fluctuations and driven response of insect swarms. <i>Physical Review Letters</i> , 2015 , 115, 118104	7.4	34
50	Long-range ordering of turbulent stresses in two-dimensional flow. <i>Physical Review E</i> , 2015 , 91, 063004	2.4	7
49	Time-Frequency Analysis Reveals Pairwise Interactions in Insect Swarms. <i>Physical Review Letters</i> , 2015 , 114, 258103	7.4	32
48	Velocity correlations in laboratory insect swarms. <i>European Physical Journal: Special Topics</i> , 2015 , 224, 3271-3277	2.3	16
47	Direct observation of Kelvin waves excited by quantized vortex reconnection. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014 , 111 Suppl 1, 4707-10	11.5	109
46	Geometry of scale-to-scale energy and enstrophy transport in two-dimensional flow. <i>Physics of Fluids</i> , 2014 , 26, 045103	4.4	14
45	Determining asymptotically large population sizes in insect swarms. <i>Journal of the Royal Society Interface</i> , 2014 , 11,	4.1	37
44	Impact fragmentation of model flocks. <i>Physical Review E</i> , 2014 , 89, 042806	2.4	4

43	Searching for effective forces in laboratory insect swarms. <i>Scientific Reports</i> , 2014 , 4, 4766	4.9	56
42	Extracting turbulent spectral transfer from under-resolved velocity fields. <i>Physics of Fluids</i> , 2014 , 26, 105107	4.4	8
41	Alignment of vorticity and rods with Lagrangian fluid stretching in turbulence. <i>Journal of Fluid Mechanics</i> , 2014 , 743,	3.7	64
40	Lagrangian coherent structures separate dynamically distinct regions in fluid flows. <i>Physical Review E</i> , 2013 , 88, 013017	2.4	22
39	Generation of Lagrangian intermittency in turbulence by a self-similar mechanism. <i>New Journal of Physics</i> , 2013 , 15, 055015	2.9	9
38	Stability of model flocks in turbulent-like flow. <i>New Journal of Physics</i> , 2013 , 15, 095015	2.9	14
37	Spatial structure of spectral transport in two-dimensional flow. <i>Journal of Fluid Mechanics</i> , 2013 , 725, 281-298	3.7	26
36	Quantifying stretching and rearrangement in epithelial sheet migration. <i>New Journal of Physics</i> , 2013 , 15,	2.9	28
35	Emergent dynamics of laboratory insect swarms. <i>Scientific Reports</i> , 2013 , 3, 1073	4.9	90
34	Effects of forcing geometry on two-dimensional weak turbulence. <i>Physical Review E</i> , 2012 , 86, 036306	2.4	11
33	On the dynamical role of coherent structures in turbulence. <i>Comptes Rendus Physique</i> , 2012 , 13, 866-877	1.4	19
32	Turbulence in two dimensions. <i>Physics Today</i> , 2012 , 65, 68-69	0.9	9
31	Interactions between active particles and dynamical structures in chaotic flow. <i>Physics of Fluids</i> , 2012 , 24, 091902	4.4	15
30	Neutrally buoyant particle dynamics in fluid flows: Comparison of experiments with Lagrangian stochastic models. <i>Physics of Fluids</i> , 2011 , 23, 093304	4.4	18
29	Spatiotemporal persistence of spectral fluxes in two-dimensional weak turbulence. <i>Physics of Fluids</i> , 2011 , 23, 115101	4.4	30
28	Mechanisms driving shape distortion in two-dimensional flow. <i>Europhysics Letters</i> , 2011 , 94, 64006	1.6	5
27	Separating stretching from folding in fluid mixing. <i>Nature Physics</i> , 2011 , 7, 477-480	16.2	34
26	Path Lengths in Turbulence. <i>Journal of Statistical Physics</i> , 2011 , 145, 93-101	1.5	1

25	Using particle tracking to measure flow instabilities in an undergraduate laboratory experiment. <i>American Journal of Physics</i> , 2011 , 79, 267-273	0.7	55
24	Reduced transport of swimming particles in chaotic flow due to hydrodynamic trapping. <i>Physical Review Letters</i> , 2011 , 106, 198104	7.4	41
23	Onset of three-dimensionality in electromagnetically driven thin-layer flows. <i>Physics of Fluids</i> , 2011 , 23, 045103	4.4	43
22	Rotation and alignment of rods in two-dimensional chaotic flow. <i>Physics of Fluids</i> , 2011 , 23, 043302	4.4	52
21	Scale-dependent statistical geometry in two-dimensional flow. <i>Physical Review Letters</i> , 2010 , 104, 254504	7.4	11
20	Scale-local velocity fields from particle-tracking data. <i>Chaos</i> , 2010 , 20, 041106	3.3	
19	Bulk turbulence in dilute polymer solutions. <i>Journal of Fluid Mechanics</i> , 2009 , 629, 375-385	3.7	42
18	Dynamic topology in spatiotemporal chaos. <i>Physics of Fluids</i> , 2008 , 20, 064104	4.4	30
17	Lagrangian structure functions in turbulence: A quantitative comparison between experiment and direct numerical simulation. <i>Physics of Fluids</i> , 2008 , 20, 065103	4.4	60
16	Evolution of geometric structures in intense turbulence. <i>New Journal of Physics</i> , 2008 , 10, 013012	2.9	34
15	Transport of finite-sized particles in chaotic flow. <i>Physical Review Letters</i> , 2008 , 101, 174504	7.4	59
14	Universal intermittent properties of particle trajectories in highly turbulent flows. <i>Physical Review Letters</i> , 2008 , 100, 254504	7.4	123
13	Detecting topological features of chaotic fluid flow. <i>Chaos</i> , 2008 , 18, 041102	3.3	
12	Curvature fields, topology, and the dynamics of spatiotemporal chaos. <i>Physical Review Letters</i> , 2007 , 99, 194502	7.4	43
11	Curvature of lagrangian trajectories in turbulence. <i>Physical Review Letters</i> , 2007 , 98, 050201	7.4	46
10	Acceleration correlations and pressure structure functions in high-reynolds number turbulence. <i>Physical Review Letters</i> , 2007 , 99, 204501	7.4	25
9	Lagrangian particle tracking in high Reynolds number turbulence 2007 , 299-311		
8	Experimental Measurements of Lagrangian Statistics in Intense Turbulence 2007 , 1-10		1

7	Small-scale anisotropy in Lagrangian turbulence. <i>New Journal of Physics</i> , 2006 , 8, 102-102	2.9	72
6	High order Lagrangian velocity statistics in turbulence. <i>Physical Review Letters</i> , 2006 , 96, 024503	7.4	67
5	Multifractal dimension of Lagrangian turbulence. <i>Physical Review Letters</i> , 2006 , 96, 114503	7.4	21
4	The role of pair dispersion in turbulent flow. <i>Science</i> , 2006 , 311, 835-8	33.3	156
3	An experimental study of turbulent relative dispersion models. <i>New Journal of Physics</i> , 2006 , 8, 109-109	2.9	69
2	A quantitative study of three-dimensional Lagrangian particle tracking algorithms. <i>Experiments in Fluids</i> , 2006 , 40, 301-313	2.5	288
1	Particle-based measurement techniques for soft matter	180-208	0