David J T Sumpter

List of Publications by Year
in descending order

72 papers	5,994 citations	126907 33 h-index	91884 69 g-index
75 all docs	75 docs citations	75 times ranked	4259 citing authors

#	Article	IF	Citations
1	Inferring the rules of interaction of shoaling fish. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 18726-18731.	7.1	459
2	Quorum decision-making facilitates information transfer in fish shoals. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 6948-6953.	7.1	395
3	Quorum sensing, recruitment, and collective decision-making during colony emigration by the ant Leptothorax albipennis. Behavioral Ecology and Sociobiology, 2002, 52, 117-127.	1.4	381
4	Fast and accurate decisions through collective vigilance in fish shoals. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 2312-2315.	7.1	302
5	Quorum responses and consensus decision making. Philosophical Transactions of the Royal Society B: Biological Sciences, 2009, 364, 743-753.	4.0	285
6	From Compromise to Leadership in Pigeon Homing. Current Biology, 2006, 16, 2123-2128.	3.9	247
7	Inherent noise can facilitate coherence in collective swarm motion. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 5464-5469.	7.1	240
8	Consensus Decision Making by Fish. Current Biology, 2008, 18, 1773-1777.	3.9	231
9	The sustainable development oxymoron: quantifying and modelling the incompatibility of sustainable development goals. International Journal of Sustainable Development and World Ecology, 2017, 24, 457-470.	5.9	214
10	Visual attention and the acquisition of information in human crowds. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 7245-7250.	7.1	174
11	Solving the shepherding problem: heuristics for herding autonomous, interacting agents. Journal of the Royal Society Interface, 2014, 11, 20140719.	3.4	140
12	Individual Rules for Trail Pattern Formation in Argentine Ants (Linepithema humile). PLoS Computational Biology, 2012, 8, e1002592.	3.2	137
13	Information transfer in moving animal groups. Theory in Biosciences, 2008, 127, 177-186.	1.4	134
14	A tunable algorithm for collective decision-making. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 15906-15910.	7.1	131
15	How predation shapes the social interaction rules of shoaling fish. Proceedings of the Royal Society B: Biological Sciences, 2017, 284, 20171126.	2.6	120
16	Initiation and spread of escape waves within animal groups. Royal Society Open Science, 2015, 2, 140355.	2.4	91
17	Moving calls: a vocal mechanism underlying quorum decisions in cohesive groups. Proceedings of the Royal Society B: Biological Sciences, 2011, 278, 1482-1488.	2.6	90
18	The modelling cycle for collective animal behaviour. Interface Focus, 2012, 2, 764-773.	3.0	90

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19	Ant colonies outperform individuals when a sensory discrimination task is difficult but not when it is easy. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 13769-13773.	7.1	85
20	Interaction rules underlying group decisions in homing pigeons. Journal of the Royal Society Interface, 2013, 10, 20130529.	3.4	82
21	Optimisation in a natural system: Argentine ants solve the Towers of Hanoi. Journal of Experimental Biology, 2011, 214, 50-58.	1.7	81
22	Shape and efficiency of wood ant foraging networks. Behavioral Ecology and Sociobiology, 2009, 63, 451-460.	1.4	70
23	Synergy and Group Size in Microbial Cooperation. American Naturalist, 2012, 180, 296-305.	2.1	69
24	Quorum Decision-Making in Foraging Fish Shoals. PLoS ONE, 2012, 7, e32411.	2.5	65
25	Structure and formation of ant transportation networks. Journal of the Royal Society Interface, 2011, 8, 1298-1306.	3.4	64
26	What makes a honeybee scout?. Behavioral Ecology and Sociobiology, 2007, 61, 985-995.	1.4	58
27	The dynamics of audience applause. Journal of the Royal Society Interface, 2013, 10, 20130466.	3.4	57
28	Collective selection of food patches in <i>Drosophila</i>. Journal of Experimental Biology, 2016, 219, 668-675.	1.7	55
29	Bayesian Dynamical Systems Modelling in the Social Sciences. PLoS ONE, 2014, 9, e86468.	2.5	45
30	The Dynamics of Democracy, Development and Cultural Values. PLoS ONE, 2014, 9, e97856.	2.5	45
31	How dancing honey bees keep track of changes: the role of inspector bees. Behavioral Ecology, 2012, 23, 588-596.	2.2	44
32	Quantifying the structure and dynamics of fish shoals under predation threat in three dimensions. Behavioral Ecology, 2020, 31, 311-321.	2.2	42
33	Multi-scale Inference of Interaction Rules in Animal Groups Using Bayesian Model Selection. PLoS Computational Biology, 2013, 9, e1002961.	3.2	39
34	Understanding Animal Group-Size Distributions. PLoS ONE, 2011, 6, e23438.	2.5	37
35	Emergent Structural Mechanisms for High-Density Collective Motion Inspired by Human Crowds. Physical Review Letters, 2016, 117, 228301.	7.8	35
36	The Impact of Human Mobility on HIV Transmission in Kenya. PLoS ONE, 2015, 10, e0142805.	2.5	31

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37	Current-reinforced random walks for constructing transport networks. Journal of the Royal Society Interface, 2013, 10, 20120864.	3.4	30
38	Local interactions and global properties of wild, free-ranging stickleback shoals. Royal Society Open Science, 2017, 4, 170043.	2.4	30
39	A first principles derivation of animal group size distributions. Journal of Theoretical Biology, 2011, 283, 35-43.	1.7	28
40	Body size affects the strength of social interactions and spatial organization of a schooling fish (<i>Pseudomugil signifer</i>). Royal Society Open Science, 2017, 4, 161056.	2.4	28
41	Collective Irrationality and Positive Feedback. PLoS ONE, 2011, 6, e18901.	2.5	27
42	Initiators, Leaders, and Recruitment Mechanisms in the Collective Movements of Damselfish. American Naturalist, 2013, 181, 748-760.	2.1	27
43	Murmurations. Current Biology, 2012, 22, R112-R114.	3.9	26
44	Using activity and sociability to characterize collective motion. Philosophical Transactions of the Royal Society B: Biological Sciences, 2018, 373, 20170015.	4.0	25
45	Rapid evolution of coordinated and collective movement in response to artificial selection. Science Advances, 2020, 6, .	10.3	25
46	Phenotypic variability in unicellular organisms: from calcium signalling to social behaviour. Proceedings of the Royal Society B: Biological Sciences, 2015, 282, 20152322.	2.6	24
47	Mathematical modeling reveals spontaneous emergence of self-replication in chemical reaction systems. Journal of Biological Chemistry, 2018, 293, 18854-18863.	3.4	21
48	Six Predictions about the Decision Making of Animal and Human Groups. Managerial and Decision Economics, 2012, 33, 295-309.	2.5	18
49	Symmetry Restoring Bifurcation in Collective Decision-Making. PLoS Computational Biology, 2014, 10, e1003960.	3.2	18
50	Phenotypic variability predicts decision accuracy in unicellular organisms. Proceedings of the Royal Society B: Biological Sciences, 2019, 286, 20182825.	2.6	17
51	Flying insect swarms. Current Biology, 2014, 24, R828-R830.	3.9	14
52	The Dynamics, Causes and Possible Prevention of Hepatitis E Outbreaks. PLoS ONE, 2012, 7, e41135.	2.5	13
53	Integration of Social Information by Human Groups. Topics in Cognitive Science, 2015, 7, 469-493.	1.9	13
54	Understanding Democracy and Development Traps Using a Data-Driven Approach. Big Data, 2015, 3, 22-33.	3.4	13

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55	Risk management in spatio-temporally varying field by true slime mold. Nonlinear Theory and Its Applications IEICE, 2010, 1, 26-36.	0.6	12
56	Group Behaviour: Leadership by Those in Need. Current Biology, 2009, 19, R325-R327.	3.9	11
57	Identifying Complex Dynamics in Social Systems. Sociological Methods and Research, 2018, 47, 103-135.	6.8	11
58	Brain size does not impact shoaling dynamics in unfamiliar groups of guppies (Poecilia reticulata). Behavioural Processes, 2018, 147, 13-20.	1.1	11
59	Multi-scale Inference of Interaction Rules in Animal Groups Using Bayesian Model Selection. PLoS Computational Biology, 2012, 8, e1002308.	3.2	10
60	An efficient method for sorting and quantifying individual social traits based on groupâ€level behaviour. Methods in Ecology and Evolution, 2017, 8, 1735-1744.	5.2	8
61	Insights into resource consumption, cross-feeding, system collapse, stability and biodiversity from an artificial ecosystem. Journal of the Royal Society Interface, 2017, 14, 20160816.	3.4	7
62	Is the golden ratio a universal constant for self-replication?. PLoS ONE, 2018, 13, e0200601.	2.5	7
63	Setting development goals using stochastic dynamical system models. PLoS ONE, 2017, 12, e0171560.	2.5	7
64	Choice modelling with Gaussian processes in the social sciences: A case study of neighbourhood choice in Stockholm. PLoS ONE, 2018, 13, e0206687.	2.5	5
65	EU institutional reforms. Journal of Policy Modeling, 2008, 30, 71-86.	3.1	4
66	Using Bayesian dynamical systems, model averaging and neural networks to determine interactions between socio-economic indicators. PLoS ONE, 2018, 13, e0196355.	2.5	4
67	Modelling optimal allocation of resources in the context of an incurable disease. PLoS ONE, 2017, 12, e0172401.	2.5	2
68	Inferring the dynamics of rising radical right-wing party support using Gaussian processes. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20190145.	3.4	2
69	Peer selection in EU intergovernmental negotiations. Journal of European Public Policy, 2009, 16, 356-377.	4.0	1
70	Explaining and Predicting the Rise of a Radical Right-Wing Party Using Gaussian Processes. SSRN Electronic Journal, 0, , .	0.4	1
71	Tuning positive feedback for signal detection in noisy dynamic environments. Journal of Theoretical Biology, 2012, 309, 88-95.	1.7	0
72	Last Night in Sweden? Using Gaussian Processes to Study Changing Demographics at the Level of Municipalities. European Journal of Crime, Criminal Law and Criminal Justice, 2020, 28, 46-75.	0.2	0