Sergei V PetrovskiÇ•

List of Publications by Year
in descending order

122 papers	4,604 citations	94433 37 h-index	118850 62 g-index
132 all docs	132 docs citations	132 times ranked	2677 citing authors

#	Article	IF	Citations
1	A predictive model and a field study on heterogeneous slug distribution in arable fields arising from density dependent movement. Scientific Reports, 2022, 12, 2274.	3.3	2
2	Effect of Slowâ€"Fast Time Scale on Transient Dynamics in a Realistic Prey-Predator System. Mathematics, 2022, 10, 699.	2.2	6
3	Knowledge gaps and missing links in understanding mass extinctions: Can mathematical modeling help?. Physics of Life Reviews, 2022, 41, 22-57.	2.8	13
4	Canards, relaxation oscillations, and pattern formation in a slow-fast ratio-dependent predator-prey system. Applied Mathematical Modelling, 2022, 109, 519-535.	4.2	9
5	Analysis of simulated trap counts arising from correlated and biased random walks. Ecological Modelling, 2022, 470, 110016.	2.5	2
6	Spatiotemporal pattern formation in 2D prey-predator system with nonlocal intraspecific competition. Communications in Nonlinear Science and Numerical Simulation, 2021, 93, 105478.	3.3	12
7	Management implications of long transients in ecological systems. Nature Ecology and Evolution, 2021, 5, 285-294.	7.8	44
8	Nonlocal Reactionâ€"Diffusion Models of Heterogeneous Wealth Distribution. Mathematics, 2021, 9, 351.	2.2	6
9	Stability of a planetary climate system with the biosphere species competing for resources. Physical Review E, 2021, 103, 022202.	2.1	5
10	Global Warming Can Result in Global Anoxia by Disrupting Phytoplankton Photosynthesis. , 2021, , 243-249.		0
11	Turing instability in an economicâ€"demographic dynamical system may lead to pattern formation on a geographical scale. Journal of the Royal Society Interface, 2021, 18, 20210034.	3.4	15
12	Effects of stochasticity on the length and behaviour of ecological transients. Journal of the Royal Society Interface, 2021, 18, 20210257.	3.4	25
13	Oscillations and Pattern Formation in a Slowâ€"Fast Preyâ€"Predator System. Bulletin of Mathematical Biology, 2021, 83, 110.	1.9	10
14	Metapopulation Persistence and Extinction in a Fragmented Random Habitat: A Simulation Study. Mathematics, 2021, 9, 2202.	2.2	1
15	Towards Building a Sustainable Future: Positioning Ecological Modelling for Impact in Ecosystems Management. Bulletin of Mathematical Biology, 2021, 83, 107.	1.9	14
16	Stability of Patches of Higher Population Density within the Heterogenous Distribution of the Gray Field Slug Deroceras reticulatum in Arable Fields in the UK. Insects, 2021, 12, 9.	2.2	3
17	Long transients in ecology: Theory and applications. Physics of Life Reviews, 2020, 32, 1-40.	2.8	126
18	Long living transients: Enfant terrible of ecological theory?. Physics of Life Reviews, 2020, 32, 55-58.	2.8	2

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19	Movement patterns of the grey field slug (Deroceras reticulatum) in an arable field. Scientific Reports, 2020, 10, 17970.	3.3	6
20	Numerical Analysis for the Fractional Ambartsumian Equation via the Homotopy Herturbation Method. Mathematics, 2020, 8, 2247.	2.2	1
21	Rich Bifurcation Structure of Preyâ€"Predator Model Induced by the Allee Effect in the Growth of Generalist Predator. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2020, 30, 2050084.	1.7	20
22	Modelling Population Dynamics of Social Protests in Time and Space: The Reaction-Diffusion Approach. Mathematics, 2020, 8, 78.	2.2	4
23	Locomotor behaviour promotes stability of the patchy distribution of slugs in arable fields: Tracking the movement of individual Deroceras reticulatum. Pest Management Science, 2020, 76, 2944-2952.	3.4	7
24	On the Consistency of the Reaction-Telegraph Process Within Finite Domains. Journal of Statistical Physics, 2019, 177, 569-587.	1.2	12
25	Analysing the impact of trap shape and movement behaviour of groundâ€dwelling arthropods on trap efficiency. Methods in Ecology and Evolution, 2019, 10, 1246-1264.	5.2	31
26	Investigation into the Critical Domain Problem for the Reaction-Telegraph Equation Using Advanced Numerical Algorithms. International Journal of Applied and Computational Mathematics, 2019, 5, 1.	1.6	5
27	Effect of density-dependent individual movement on emerging spatial population distribution: Brownian motion vs Levy flights. Journal of Theoretical Biology, 2019, 464, 159-178.	1.7	11
28	Effect of complex landscape geometry on the invasive species spread: Invasion with stepping stones. Journal of Theoretical Biology, 2019, 464, 85-97.	1.7	13
29	Patterns of invasive species spread in a landscape with a complex geometry. Ecological Complexity, 2018, 33, 93-105.	2.9	5
30	Pattern Formation in a Model Oxygen-Plankton System. Computation, 2018, 6, 59.	2.0	7
31	Progress in Mathematical Ecology. Mathematics, 2018, 6, 167.	2.2	1
32	Transient phenomena in ecology. Science, 2018, 361, .	12.6	359
33	An economic-demographic dynamical system. Mathematical Modelling of Natural Phenomena, 2018, 13, 27.	2.4	5
34	Towards the Development of a More Accurate Monitoring Procedure for Invertebrate Populations, in the Presence of an Unknown Spatial Pattern of Population Distribution in the Field. Insects, 2018, 9, 29.	2.2	7
35	Critical Domain Problem for the Reactionâ€"Telegraph Equation Model of Population Dynamics. Mathematics, 2018, 6, 59.	2.2	16
36	The â€œLÃ©vy or Diffusionâ€•Controversy: How Important Is the Movement Pattern in the Context of Trapping?. Mathematics, 2018, 6, 77.	2.2	6

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37	Global Warming Can Lead to Depletion of Oxygen by Disrupting Phytoplankton Photosynthesis: A Mathematical Modelling Approach. Geosciences (Switzerland), 2018, 8, 201.	2.2	28
38	Catching ghosts with a coarse net: use and abuse of spatial sampling data in detecting synchronization. Journal of the Royal Society Interface, 2017, 14, 20160855.	3.4	8
39	Regime shifts and ecological catastrophes in a model of plankton-oxygen dynamics under the climate change. Journal of Theoretical Biology, 2017, 424, 91-109.	1.7	31
40	Fortune favours the brave: Movement responses shape demographic dynamics in strongly competing populations. Journal of Theoretical Biology, 2017, 420, 190-199.	1.7	15
41	A random acceleration model of individual animal movement allowing for diffusive, superdiffusive and superballistic regimes. Scientific Reports, 2017, 7, 14364.	3.3	6
42	Patchy, not patchy, or how much patchy? Classification of spatial patterns appearing in a model of biological invasion. Mathematical Modelling of Natural Phenomena, 2017, 12, 208-225.	2.4	8
43	A random walk description of individual animal movement accounting for periods of rest. Royal Society Open Science, 2016, 3, 160566.	2.4	14
44	Reactionâ€"Diffusion Models: Single Species. Interdisciplinary Applied Mathematics, 2016, , 69-105.	0.3	2
45	How animals move along? Exactly solvable model of superdiffusive spread resulting from animalâ€™s decision making. Journal of Mathematical Biology, 2016, 73, 227-255.	1.9	9
46	Delay driven spatiotemporal chaos in single species population dynamics models. Theoretical Population Biology, 2016, 110, 51-62.	1.1	20
47	Long-term transients and complex dynamics of a stage-structured population with time delay and the Allee effect. Journal of Theoretical Biology, 2016, 396, 116-124.	1.7	44
48	The Mathematics Behind Biological Invasions. Interdisciplinary Applied Mathematics, 2016, , .	0.3	126
49	Responding to Invasions: Detection, Control, and Adaptation. Interdisciplinary Applied Mathematics, 2016, , 287-305.	0.3	0
50	Dynamics of Biological Invasions. Interdisciplinary Applied Mathematics, 2016, , 19-68.	0.3	11
51	Long-Distance Dispersal and Spread. Interdisciplinary Applied Mathematics, 2016, , 155-193.	0.3	0
52	Revisiting Brownian motion as a description of animal movement: a comparison to experimental movement data. Methods in Ecology and Evolution, 2016, 7, 1525-1537.	5.2	20
53	Pattern, process, scale, and model's sensitivity. Physics of Life Reviews, 2016, 19, 131-134.	2.8	9
54	Invasion in a Multispecies System. Interdisciplinary Applied Mathematics, 2016, , 107-154.	0.3	1

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55	Time Dependent Diffusion as a Mean Field Counterpart of LÃ©vy Type Random Walk. Mathematical Modelling of Natural Phenomena, 2015, 10, 5-26.	2.4	9
56	Mathematical Modelling of Spatiotemporal Dynamics of Oxygen in a Plankton System. Mathematical Modelling of Natural Phenomena, 2015, 10, 96-114.	2.4	29
57	Statistical mechanics of animal movement: Animals's decision-making can result in superdiffusive spread. Ecological Complexity, 2015, 22, 86-92.	2.9	10
58	Patchy Invasion of Stage-Structured Alien Species with Short-Distance and Long-Distance Dispersal. Bulletin of Mathematical Biology, 2015, 77, 1583-1619.	1.9	17
59	On time scale invariance of random walks in confined space. Journal of Theoretical Biology, 2015, 367, 230-245.	1.7	14
60	Some analytical and numerical approaches to understanding trap counts resulting from pest insect immigration. Mathematical Biosciences, 2015, 263, 143-160.	1.9	11
61	Mathematical Modelling of Planktonâ€"Oxygen Dynamics Under the Climate Change. Bulletin of Mathematical Biology, 2015, 77, 2325-2353.	1.9	91
62	Multiscale ecology of agroecosystems is an emerging research field that can provide a stronger theoretical background for the integrated pest management. Physics of Life Reviews, 2014, 11, 536-539.	2.8	2
63	Multiscale approach to pest insect monitoring: Random walks, pattern formation, synchronization, and networks. Physics of Life Reviews, 2014, 11, 467-525.	2.8	56
64	Are time delays always destabilizing? Revisiting the role of time delays and the Allee effect. Theoretical Ecology, 2014, 7, 335-349.	1.0	37
65	Spatiotemporal behavior of a preyâ€"predator system with a group defense for prey. Ecological Complexity, 2013, 14, 37-47.	2.9	77
66	Numerical Study of Pest Population Size at Various Diffusion Rates. Lecture Notes in Mathematics, 2013, , 355-385.	0.2	3
67	Gypsy moth invasion in North America: A simulation study of the spatial pattern and the rate of spread. Ecological Complexity, 2013, 14, 132-144.	2.9	16
68	Synchronized Dynamics of <i>Tipula paludosa</i> Metapopulation in a Southwestern Scotland Agroecosystem: Linking Pattern to Process. American Naturalist, 2013, 182, 393-409.	2.1	15
69	Feeding on Multiple Sources: Towards a Universal Parameterization of the Functional Response of a Generalist Predator Allowing for Switching. PLoS ONE, 2013, 8, e74586.	2.5	47
70	Challenges of ecological monitoring: estimating population abundance from sparse trap counts. Journal of the Royal Society Interface, 2012, 9, 420-435.	3.4	29
71	Comment on â€œLÃ©vy Walks Evolve Through Interaction Between Movement and Environmental Complexityâ€• Science, 2012, 335, 918-918.	12.6	84
72	Computational ecology as an emerging science. Interface Focus, 2012, 2, 241-254.	3.0	43

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73	Multi-scale properties of random walk models of animal movement: lessons from statistical inference. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 1428-1451.	2.1	20
74	Estimating insect population density from trap counts. Ecological Complexity, 2012, 10, 69-82.	2.9	43
75	Spatiotemporal complexity of biological invasion in a space- and time-discrete predatorâ€"prey system with the strong Allee effect. Ecological Complexity, 2012, 9, 16-32.	2.9	79
76	Pattern formation in a space- and time-discrete predatorâ€"prey system with a strong Allee effect. Theoretical Ecology, 2012, 5, 341-362.	1.0	50
77	Collective dynamics: when one plus one does not make two. Mathematical Medicine and Biology, 2011, 28, 85-88.	1.2	2
78	Self-organised spatial patterns and chaos in a ratio-dependent predatorâ€"prey system. Theoretical Ecology, 2011, 4, 37-53.	1.0	125
79	Pattern Formation, Long-Term Transients, and theÂTuringâ€"Hopf Bifurcation in a Space- and Time-Discrete Predatorâ€"Prey System. Bulletin of Mathematical Biology, 2011, 73, 1812-1840.	1.9	48
80	Variation in individual walking behavior creates the impression of a LÃ©vy flight. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 8704-8707.	7.1	116
81	Noise can prevent onset of chaos in spatiotemporal population dynamics. European Physical Journal B, 2010, 78, 253-264.	1.5	11
82	Noise-induced suppression of periodic travelling waves in oscillatory reactionâ€"diffusion systems. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2010, 466, 1903-1917.	2.1	11
83	The coarse-grid problem in ecological monitoring. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2010, 466, 2933-2953.	2.1	20
84	Excitable Population Dynamics, Biological Control Failure, and Spatiotemporal Pattern Formation in a Model Ecosystem. Bulletin of Mathematical Biology, 2009, 71, 863-887.	1.9	40
85	Dispersal in a Statistically Structured Population: Fat Tails Revisited. American Naturalist, 2009, 173, 278-289.	2.1	78
86	Consequences of the Allee Effect and Intraspecific Competition on Population Persistence under Adverse Environmental Conditions. Bulletin of Mathematical Biology, 2008, 70, 412-437.	1.9	12
87	Mathematical Models of Pattern Formation in Planktonic Predation-Diffusion Systems: A Review. , 2008, , 1-26.		1
88	On a possible origin of the fat-tailed dispersal in population dynamics. Ecological Complexity, 2008, 5, 146-150.	2.9	30
89	The importance of census times in discrete-time growth-dispersal models. Journal of Biological Dynamics, 2008, 2, 55-63.	1.7	14
90	A diffusive SI model with Allee effect and application to FIV. Mathematical Biosciences, 2007, 206, 61-80.	1.9	97

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91	Limitation and Regulation of Ecological Populations: a Meta-analysis of<i>Tipula paludosa</i>Field Data. Mathematical Modelling of Natural Phenomena, 2007, 2, 46-62.	2.4	19
92	Towards resolving the paradox of enrichment: The impact of zooplankton vertical migrations on plankton systems stability. Journal of Theoretical Biology, 2007, 248, 501-511.	1.7	28
93	Biodiversity measures revisited. Ecological Complexity, 2006, 3, 13-22.	2.9	7
94	Oscillations and waves in a virally infected plankton system. Ecological Complexity, 2006, 3, 200-208.	2.9	28
95	Spatiotemporal complexity of patchy invasion in a predator-prey system with the Allee effect.. Journal of Theoretical Biology, 2006, 238, 18-35.	1.7	129
96	An ecological study of a marine plankton community based on the field data collected from Bay of Bengal. Ecological Modelling, 2006, 193, 589-601.	2.5	22
97	Regimes of biological invasion in a predator?prey system with the Allee effect. Bulletin of Mathematical Biology, 2005, 67, 637-661.	1.9	81
98	Invasion of a Top Predator into an Epipelagic Ecosystem can bring a Paradoxical Top-Down Trophic Control. Biological Invasions, 2005, 7, 845-861.	2.4	13
99	Patterns of Patchy Spread in Deterministic and Stochastic Models of Biological Invasion and Biological Control. Biological Invasions, 2005, 7, 771-793.	2.4	45
100	An exact solution of a diffusive predatorâ€“prey system. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2005, 461, 1029-1053.	2.1	50
101	Transition to spatiotemporal chaos can resolve the paradox of enrichment. Ecological Complexity, 2004, 1, 37-47.	2.9	104
102	Oscillations and waves in a virally infected plankton system. Ecological Complexity, 2004, 1, 211-223.	2.9	49
103	Bifurcations and chaos in a predator-prey system with the Allee effect. Proceedings of the Royal Society B: Biological Sciences, 2004, 271, 1407-1414.	2.6	137
104	Behaviourally structured populations persist longer under harsh environmental conditions. Ecology Letters, 2003, 6, 455-462.	6.4	12
105	Quantification of the Spatial Aspect of Chaotic Dynamics in Biological and Chemical Systems. Bulletin of Mathematical Biology, 2003, 65, 425-446.	1.9	59
106	An exactly solvable model of population dynamics with density-dependent migrations and the Allee effect. Mathematical Biosciences, 2003, 186, 79-91.	1.9	52
107	Patterns in Models of Plankton Dynamics in a Heterogeneous Environment. , 2003, , 401-410.		1
108	Spatio-temporal pattern formation, fractals, and chaos in conceptual ecological models as applied to coupled plankton-fish dynamics. Physics-Uspekhi, 2002, 45, 27-57.	2.2	31

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109	Spatiotemporal Complexity of Plankton and Fish Dynamics. SIAM Review, 2002, 44, 311-370.	9.5	417
110	Numerical study of planktonâ€"fish dynamics in a spatially structured and noisy environment. Ecological Modelling, 2002, 149, 247-255.	2.5	46
111	Allee effect makes possible patchy invasion in a predator-prey system. Ecology Letters, 2002, 5, 345-352.	6.4	146
112	Dynamical stabilization of an unstable equilibrium in chemical and biological systems. Mathematical and Computer Modelling, 2002, 36, 307-319.	2.0	41
113	Wave of Chaos: New Mechanism of Pattern Formation in Spatio-temporal Population Dynamics. Theoretical Population Biology, 2001, 59, 157-174.	1.1	197
114	Some exact solutions of a generalized Fisher equation related to the problem of biological invasion. Mathematical Biosciences, 2001, 172, 73-94.	1.9	42
115	Diffusive waves, dynamical stabilization and spatio-temporal chaos in a community of three competitive species. Japan Journal of Industrial and Applied Mathematics, 2001, 18, 459-481.	0.9	42
116	Increased Coupling Between Subpopulations in a Spatially Structured Environment Can Lead to Population Outbreaks. Journal of Theoretical Biology, 2001, 212, 549-562.	1.7	11
117	Pattern formation in models of plankton dynamics. A synthesis. Oceanologica Acta: European Journal of Oceanology - Revue Europeene De Oceanologie, 2001, 24, 479-487.	0.7	28
118	SPATIO-TEMPORAL CHAOS IN AN ECOLOGICAL COMMUNITY AS A RESPONSE TO UNFAVOURABLE ENVIRONMENTAL CHANGES. International Journal of Modeling, Simulation, and Scientific Computing, 2001, 04, 227-249.	1.4	12
119	Critical phenomena in plankton communities: KISS model revisited. Nonlinear Analysis: Real World Applications, 2000, 1, 37-51.	1.7	46
120	Spatio-temporal pattern formation in coupled models of plankton dynamics and fish school motion. Nonlinear Analysis: Real World Applications, 2000, 1, 53-67.	1.7	53
121	On the plankton front waves accelerated by marine turbulence. Journal of Marine Systems, 1999, 21, 179-188.	2.1	18
122	Approximate determination of the magnitude of the critical size in the problem of the evolution of an impact. Journal of Engineering Physics and Thermophysics, 1994, 66, 346-352.	0.6	7