

J Miguel Rubi

List of Publications by Year in descending order

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153
papers

4,432
citations

126708

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61
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157
all docs

157
docs citations

157
times ranked

2308
citing authors

#	ARTICLE	IF	CITATIONS
1	Kinetic equations for diffusion in the presence of entropic barriers. <i>Physical Review E</i> , 2001, 64, 061106.	0.8	367
2	Entropic Transport: Kinetics, Scaling, and Control Mechanisms. <i>Physical Review Letters</i> , 2006, 96, 130603.	2.9	281
3	The Mesoscopic Dynamics of Thermodynamic Systems. <i>Journal of Physical Chemistry B</i> , 2005, 109, 21502-21515.	1.2	196
4	Biased diffusion in confined media: Test of the Fick-Jacobs approximation and validity criteria. <i>Physical Review E</i> , 2007, 75, 051111.	0.8	167
5	Entropic Stochastic Resonance. <i>Physical Review Letters</i> , 2008, 101, 130602.	2.9	161
6	Entropic Splitter for Particle Separation. <i>Physical Review Letters</i> , 2012, 108, 020604.	2.9	142
7	Stochastic Multiresonance. <i>Physical Review Letters</i> , 1997, 78, 2882-2885.	2.9	130
8	Thermodynamics "beyond" local equilibrium. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2001, 98, 11081-11084.	3.3	122
9	Spatiotemporal Stochastic Resonance in the Swift-Hohenberg Equation. <i>Physical Review Letters</i> , 1997, 78, 2886-2889.	2.9	111
10	Divergent Signal-to-Noise Ratio and Stochastic Resonance in Monostable Systems. <i>Physical Review Letters</i> , 1996, 77, 2863-2866.	2.9	108
11	Heat transfer in protein-water interfaces. <i>Physical Chemistry Chemical Physics</i> , 2010, 12, 1610.	1.3	95
12	Entropic particle transport in periodic channels. <i>BioSystems</i> , 2008, 93, 16-22.	0.9	92
13	Mesoscopic Nonequilibrium Thermodynamics Gives the Same Thermodynamic Basis to Butler-Volmer and Nernst Equations. <i>Journal of Physical Chemistry B</i> , 2003, 107, 13471-13477.	1.2	72
14	Entropic stochastic resonance: the constructive role of the unevenness. <i>European Physical Journal B</i> , 2009, 69, 11-18.	0.6	71
15	Noise Suppression by Noise. <i>Physical Review Letters</i> , 2001, 86, 950-953.	2.9	65
16	Khinchin Theorem and Anomalous Diffusion. <i>Physical Review Letters</i> , 2008, 101, 230602.	2.9	63
17	Universality of the 1/3 Shot-Noise Suppression Factor in Nondegenerate Diffusive Conductors. <i>Physical Review Letters</i> , 1998, 80, 2901-2904.	2.9	59
18	Heat transfer between nanoparticles: Thermal conductance for near-field interactions. <i>Physical Review B</i> , 2008, 77, .	1.1	55

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19	Inferring the in vivo looping properties of DNA. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 17642-17645.	3.3	54
20	Double entropic stochastic resonance. Europhysics Letters, 2009, 87, 50003.	0.7	53
21	Entropic Electrokinetics: Recirculation, Particle Separation, and Negative Mobility. Physical Review Letters, 2014, 113, 128301.	2.9	49
22	Particle-cluster aggregation with dipolar interactions. Physical Review E, 1995, 51, 5994-6003.	0.8	48
23	Stochastic resonance in a system of ferromagnetic particles. Physical Review E, 1995, 51, 4159-4164.	0.8	46
24	Thermomolecular Orientation of Nonpolar Fluids. Physical Review Letters, 2012, 108, 105901.	2.9	45
25	Stochastic Resonance in Noisy Nondynamical Systems. Physical Review Letters, 1998, 81, 14-17.	2.9	44
26	Entropic transport in confined media: a challenge for computational studies in biological and soft-matter systems. Frontiers in Physics, 2013, 1, .	1.0	44
27	Energy dissipation in slipping biological pumps. Physical Chemistry Chemical Physics, 2005, 7, 4009.	1.3	42
28	Interplay of frequency-synchronization with noise: Current resonances, giant diffusion and diffusion-crests. Europhysics Letters, 2002, 57, 644-650.	0.7	41
29	Relation for the nonequilibrium population of the interface states: Effects on the bias dependence of the ideality factor. Journal of Applied Physics, 1997, 81, 2674-2681.	1.1	40
30	Carbon-Nanotube-Based Motor Driven by a Thermal Gradient. Journal of Physical Chemistry C, 2013, 117, 3109-3113.	1.5	38
31	The Long Arm of the Second Law. Scientific American, 2008, 299, 62-67.	1.0	37
32	Communication: System-size scaling of Boltzmann and alternate Gibbs entropies. Journal of Chemical Physics, 2014, 140, 201101.	1.2	36
33	Influence of hydrodynamic interactions on the adsorption process of large particles. Physical Review Letters, 1994, 73, 114-117.	2.9	35
34	Heat Engine Driven by Photon Tunneling in Many-Body Systems. Physical Review Applied, 2015, 4, .	1.5	34
35	Stochastic resonance in nonpotential systems. Physical Review E, 1998, 57, 4979-4985.	0.8	33
36	Active transport: a kinetic description based on thermodynamic grounds. Journal of Theoretical Biology, 2005, 234, 7-12.	0.8	33

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37	Thermokinetic Approach of Single Particles and Clusters Involving Anomalous Diffusion under Viscoelastic Response. <i>Journal of Physical Chemistry B</i> , 2007, 111, 2293-2298.	1.2	33
38	Nonequilibrium thermodynamic fluctuations of black holes. <i>Physical Review D</i> , 1988, 37, 2052-2058.	1.6	32
39	Controlling anomalous stresses in soft field-responsive systems. <i>Physical Review E</i> , 2000, 62, 5313-5317.	0.8	32
40	Heat Exchange between Two Interacting Nanoparticles beyond the Fluctuation-Dissipation Regime. <i>Physical Review Letters</i> , 2009, 103, 048301.	2.9	32
41	Electron-number statistics and shot-noise suppression by Coulomb correlation in nondegenerate ballistic transport. <i>Physical Review B</i> , 1998, 57, 1366-1369.	1.1	30
42	Self-assembling outside equilibrium: emergence of structures mediated by dissipation. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 17475-17493.	1.3	30
43	Thermodynamics for Single-Molecule Stretching Experiments. <i>Journal of Physical Chemistry B</i> , 2006, 110, 12733-12737.	1.2	29
44	Some conceptual thoughts toward nanoscale oriented friction in a model of articular cartilage. <i>Mathematical Biosciences</i> , 2013, 244, 188-200.	0.9	28
45	Entropically induced asymmetric passage times of charged tracers across corrugated channels. <i>Journal of Chemical Physics</i> , 2016, 144, 034901.	1.2	28
46	Local quasi-equilibrium description of slow relaxation systems. <i>Journal of Chemical Physics</i> , 2004, 120, 2818-2823.	1.2	27
47	Vibrational Entropy of a Protein: Large Differences between Distinct Conformations. <i>Journal of Chemical Theory and Computation</i> , 2015, 11, 351-359.	2.3	27
48	Kinetics of particles adsorption processes driven by diffusion. <i>Europhysics Letters</i> , 1997, 40, 299-304.	0.7	26
49	Self-consistent theory of shot noise in nondegenerate ballistic conductors. <i>Physical Review B</i> , 2000, 61, 5511-5529.	1.1	24
50	Influence of hydrodynamic interactions on the ballistic deposition of colloidal particles on solid surfaces. <i>Journal of Chemical Physics</i> , 1996, 105, 7815-7827.	1.2	23
51	Nonequilibrium translational effects in evaporation and condensation. <i>Journal of Chemical Physics</i> , 2003, 119, 9163-9170.	1.2	23
52	Entropic diffusion in confined soft-matter and biological systems. <i>Europhysics Letters</i> , 2019, 127, 10001.	0.7	22
53	Adsorption of Colloidal Particles in the Presence of External Fields. <i>Physical Review Letters</i> , 1995, 75, 461-464.	2.9	21
54	Optimal Resting-Growth Strategies of Microbial Populations in Fluctuating Environments. <i>PLoS ONE</i> , 2011, 6, e18622.	1.1	21

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55	Internal and external fluctuations around nonequilibrium steady states in one-dimensional heat-conduction problems. <i>Physical Review A</i> , 1986, 34, 462-467.	1.0	20
56	Asymptotic analysis of the Gunn effect with realistic boundary conditions. <i>Physical Review E</i> , 1997, 56, 1500-1510.	0.8	19
57	Unifying Thermodynamic and Kinetic Descriptions of Single-Molecule Processes: RNA Unfolding under Tension. <i>Journal of Physical Chemistry B</i> , 2007, 111, 9598-9602.	1.2	19
58	Dynamics of rodlike polymers in dilute solution. <i>Macromolecules</i> , 1993, 26, 2550-2561.	2.2	18
59	Long-range correlations in diffusive systems away from equilibrium. <i>Physical Review E</i> , 1994, 49, 267-272.	0.8	18
60	Near-field thermodynamics: Useful work, efficiency, and energy harvesting. <i>Journal of Applied Physics</i> , 2014, 115, 124307.	1.1	17
61	Dynamics of polymers in solution: the role of time-dependent hydrodynamic interactions. <i>Macromolecules</i> , 1991, 24, 5997-6005.	2.2	16
62	Suppression of non-Poissonian shot noise by Coulomb correlations in ballistic conductors. <i>Physical Review B</i> , 2000, 62, 8184-8191.	1.1	16
63	On the Thermodynamic Efficiency of Ca ²⁺ -ATPase Molecular Machines. <i>Biophysical Journal</i> , 2012, 103, 1218-1226.	0.2	16
64	The Lost Work in Dissipative Self-Assembly. <i>International Journal of Thermophysics</i> , 2013, 34, 1229-1238.	1.0	16
65	Hydrodynamic fluctuations in fluids under external gradients. <i>Physical Review A</i> , 1986, 33, 2716-2724.	1.0	15
66	Energy Transduction in Biological Systems: A Mesoscopic Non-Equilibrium Thermodynamics Perspective. <i>Journal of Non-Equilibrium Thermodynamics</i> , 2007, 32, .	2.4	15
67	Driving an electrolyte through a corrugated nanopore. <i>Journal of Chemical Physics</i> , 2019, 151, 084902.	1.2	15
68	On some properties of the entropy of a system containing a black hole. <i>General Relativity and Gravitation</i> , 1986, 18, 1245-1250.	0.7	14
69	Brownian motion in a fluid in elongational flow. <i>Journal of Statistical Physics</i> , 1988, 53, 125-136.	0.5	14
70	Long-Range-Interaction Induced Ordered Structures in Deposition Processes. <i>Physical Review Letters</i> , 1998, 80, 5373-5376.	2.9	14
71	Slow dynamics and local quasi-equilibrium relaxation in supercooled colloidal systems. <i>Journal of Physics Condensed Matter</i> , 2004, 16, S2047-S2054.	0.7	14
72	Controlling protein crystal growth rate by means of temperature. <i>Journal of Physics Condensed Matter</i> , 2011, 23, 235101.	0.7	14

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73	Chemical Cycle Kinetics: Removing the Limitation of Linearity of a Non-equilibrium Thermodynamic Description. <i>International Journal of Thermophysics</i> , 2013, 34, 1214-1228.	1.0	14
74	Heat and work distributions for mixed Gauss-€Cauchy process. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2014, 2014, P09002.	0.9	14
75	Geometrically Tuned Channel Permeability. <i>Macromolecular Symposia</i> , 2015, 357, 178-188.	0.4	14
76	Entropic rectification and current inversion in a pulsating channel. <i>Journal of Chemical Physics</i> , 2017, 146, .	1.2	14
77	Entropy facilitated active transport. <i>Journal of Chemical Physics</i> , 2017, 146, .	1.2	14
78	Understanding Gelation as a Nonequilibrium Self-Assembly Process. <i>Journal of Physical Chemistry B</i> , 2018, 122, 4937-4945.	1.2	14
79	Thermophoretic torque in colloidal particles with mass asymmetry. <i>Physical Review E</i> , 2018, 97, 052607.	0.8	14
80	The viscosity tensor of a ferrofluid under flow. <i>Journal of Chemical Physics</i> , 1992, 96, 6950-6957.	1.2	13
81	A mesoscopic approach to the slow dynamics of supercooled liquids and colloidal systems. <i>Journal of Physics Condensed Matter</i> , 2002, 14, 1651-1657.	0.7	13
82	Mesoscopic thermodynamics of stationary non-equilibrium states. <i>New Journal of Physics</i> , 2005, 7, 35-35.	1.2	13
83	Non-equilibrium molecular dynamics simulations of the thermal transport properties of Lennard-Jones fluids using configurational temperatures. <i>Molecular Simulation</i> , 2016, 42, 1214-1222.	0.9	13
84	Nonequilibrium self-assembly induced Liesegang rings in a non-isothermal system. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 4699-4707.	1.3	13
85	The Role of Energy and Matter Dissipation in Determining the Architecture of Self-Assembled Structures. <i>Journal of Physical Chemistry B</i> , 2019, 123, 5902-5908.	1.2	13
86	A Thermokinetic Approach to Radiative Heat Transfer at the Nanoscale. <i>PLoS ONE</i> , 2013, 8, e58770.	1.1	13
87	Lateral-drag propulsion forces induced by anisotropy. <i>Scientific Reports</i> , 2017, 7, 6155.	1.6	12
88	Stochastic resonance in a dipole. <i>Physical Review E</i> , 1996, 54, 6929-6932.	0.8	11
89	Noise suppression due to long-range Coulomb interaction: crossover between diffusive and ballistic transport regimes. <i>Semiconductor Science and Technology</i> , 1997, 12, 1053-1056.	1.0	11
90	Non-equilibrium thermodynamics of small-scale systems. <i>Energy</i> , 2007, 32, 297-300.	4.5	11

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91	Rectification and Non-Gaussian Diffusion in Heterogeneous Media. <i>Entropy</i> , 2016, 18, 394.	1.1	11
92	Prediction of Protein Configurational Entropy (Popcoen). <i>Journal of Chemical Theory and Computation</i> , 2018, 14, 1811-1819.	2.3	11
93	Negative Thermophoretic Force in the Strong Coupling Regime. <i>Physical Review Letters</i> , 2019, 123, 200602.	2.9	11
94	Relaxation dynamics in suspensions of ferromagnetic particles. <i>Physical Review E</i> , 1995, 51, 2190-2198.	0.8	10
95	Casimir forces between two carbon nanotubes. <i>Physical Review B</i> , 2021, 104, .	1.1	10
96	Kerr black hole thermodynamical fluctuations. <i>General Relativity and Gravitation</i> , 1985, 17, 387-396.	0.7	9
97	Temperature at Small Scales: A Lower Limit for a Thermodynamic Description. <i>Journal of Physical Chemistry B</i> , 2011, 115, 1422-1428.	1.2	9
98	Finite Systems in a Heat Bath: Spectrum Perturbations and Thermodynamics. <i>Journal of Physical Chemistry B</i> , 2016, 120, 9180-9186.	1.2	9
99	Theory of Casimir Forces without the Proximity-Force Approximation. <i>Physical Review Letters</i> , 2016, 116, 110601.	2.9	9
100	A Criterion for the Formation of Nonequilibrium Self-Assembled Structures. <i>Journal of Physical Chemistry B</i> , 2021, 125, 1838-1845.	1.2	9
101	Consistently averaged hydrodynamic interaction beyond the Oseen approximation for Rouse-Zimm-Bueche dumbbells in steady shear flow. <i>Journal of Chemical Physics</i> , 1988, 88, 1248-1252.	1.2	8
102	The rheology of field-responsive suspensions. <i>Journal of Physics Condensed Matter</i> , 2000, 12, A75-A84.	0.7	8
103	Mesoscopic non-equilibrium thermodynamic analysis of molecular motors. <i>Physical Chemistry Chemical Physics</i> , 2013, 15, 19405.	1.3	8
104	Kinetics and energetics of chemical reactions through intermediate states. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2018, 509, 86-96.	1.2	8
105	Statistical Mechanics at Strong Coupling: A Bridge between Landsberg's Energy Levels and Hill's Nanothermodynamics. <i>Nanomaterials</i> , 2020, 10, 2471.	1.9	8
106	Stochastic population dynamics in turbulent fields. <i>European Physical Journal: Special Topics</i> , 2007, 146, 177-187.	1.2	7
107	Entropy Production beyond the Thermodynamic Limit from Single-Molecule Stretching Simulations. <i>Journal of Physical Chemistry B</i> , 2020, 124, 8909-8917.	1.2	7
108	Antiresonant driven systems for particle manipulation. <i>Physical Review E</i> , 2021, 103, 062102.	0.8	7

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109	Hydrodynamic effects in polymer solutions. I. Friction coefficients in steady elongational flow. <i>Journal of Chemical Physics</i> , 1988, 88, 7964-7969.	1.2	6
110	Noise and periodic modulations in neural excitable media. <i>Physical Review E</i> , 1999, 59, 5920-5927.	0.8	6
111	Energy Transduction in Periodically Driven Non-Hermitian Systems. <i>Physical Review Letters</i> , 2000, 85, 3995-3998.	2.9	6
112	Anomalous law of cooling. <i>Journal of Chemical Physics</i> , 2015, 142, 104106.	1.2	6
113	Conditions for the generation of spin and charge currents in bulk spin Hall devices. <i>Europhysics Letters</i> , 2017, 118, 67005.	0.7	6
114	Thermodynamics Far from the Thermodynamic Limit. <i>Journal of Physical Chemistry B</i> , 2017, 121, 10429-10434.	1.2	6
115	Testing the mutual information expansion of entropy with multivariate Gaussian distributions. <i>Journal of Chemical Physics</i> , 2017, 147, 224102.	1.2	6
116	Strong Coupling and Nonextensive Thermodynamics. <i>Entropy</i> , 2020, 22, 975.	1.1	6
117	Entropic transport in a crowded medium. <i>Journal of Chemical Physics</i> , 2020, 153, 034108.	1.2	6
118	Molecular fields and statistical field theory of fluids: Application to interface phenomena. <i>Physical Review E</i> , 2020, 101, 042135.	0.8	6
119	Communication: Gibbs thermodynamics and surface properties at the nanoscale. <i>Journal of Chemical Physics</i> , 2021, 155, 221101.	1.2	6
120	Enhancing particle transport in deformable micro-channels. <i>Journal of Chemical Physics</i> , 2022, 156, 054118.	1.2	6
121	Stationary states and phase diagram for a model of the Gunn effect under realistic boundary conditions. <i>Physical Review E</i> , 1997, 56, 1490-1499.	0.8	5
122	Discretized integral hydrodynamics. <i>Physical Review E</i> , 1998, 58, 1843-1850.	0.8	5
123	Mesoscopic thermodynamics. <i>Physica Scripta</i> , 2012, T151, 014027.	1.2	5
124	Entropy production and rectification efficiency in colloid transport along a pulsating channel. <i>Journal of Physics Condensed Matter</i> , 2018, 30, 244001.	0.7	5
125	A Legendre-Fenchel Transform for Molecular Stretching Energies. <i>Nanomaterials</i> , 2020, 10, 2355.	1.9	5
126	Effect of the output of the system in signal detection. <i>Physical Review E</i> , 1997, 56, R32-R35.	0.8	4

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127	Adsorption kinetics in the presence of external fields. <i>Physical Review E</i> , 1999, 59, 4285-4297.	0.8	4
128	Thermal noise suppression: how much does it cost?. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2009, 42, 095005.	0.7	4
129	Nonequilibrium Phenomena in Confined Systems. <i>Entropy</i> , 2017, 19, 507.	1.1	4
130	Extrasynaptic Communication. <i>Frontiers in Molecular Neuroscience</i> , 2021, 14, 638858.	1.4	4
131	Monte Carlo simulations in the unconstrained ensemble. <i>Physical Review E</i> , 2021, 103, L061303.	0.8	4
132	Enhancing carrier flux for efficient drug delivery in cancer tissues. <i>Biophysical Journal</i> , 2021, 120, 5255-5266.	0.2	4
133	Frequency-dependent viscosity of a ferrofluid. <i>Journal of Chemical Physics</i> , 1995, 102, 3812-3819.	1.2	3
134	Multiscale Model for the Dielectric Permittivity. <i>Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences</i> , 2017, 72, 109-114.	0.7	3
135	The Soret coefficient from the Faxén theorem for a particle moving in a fluid under a temperature gradient. <i>European Physical Journal E</i> , 2019, 42, 55.	0.7	3
136	Casimir forces exerted by epsilon-near-zero hyperbolic materials. <i>Scientific Reports</i> , 2020, 10, 16831.	1.6	3
137	González et al. Reply. <i>Physical Review Letters</i> , 1999, 83, 1268-1268.	2.9	2
138	Non-equilibrium Stefan-Boltzmann law. <i>Journal of Non-Equilibrium Thermodynamics</i> , 2010, 35, .	2.4	2
139	Thermodynamic Efficiency of Somatic Exocytosis of Serotonin. <i>Frontiers in Physiology</i> , 2019, 10, 473.	1.3	2
140	Role of Interfacial Entropy in the Particle-Size Dependence of Thermophoretic Mobility. <i>Physical Review Letters</i> , 2020, 125, 045901.	2.9	2
141	Computational Model for Membrane Transporters. Potential Implications for Cancer. <i>Frontiers in Cell and Developmental Biology</i> , 2021, 9, 642665.	1.8	2
142	Heat transfer in the coolant channel of a heat-exchanger system based on fluctuation theories. <i>Physical Review A</i> , 1988, 38, 4822-4831.	1.0	1
143	Thermodynamics and energy conversion of near-field thermal radiation: Maximum work and efficiency bounds. <i>EPJ Web of Conferences</i> , 2014, 79, 01001.	0.1	1
144	Near-field thermodynamics and nanoscale energy harvesting. <i>Physica Scripta</i> , 2015, T165, 014026.	1.2	1

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145	Entropic Stabilization of Cas4 Protein SSO0001 Predicted with Popcoen. Entropy, 2018, 20, 580.	1.1	1
146	Variational solutions for the two-stream mixing of power-law fluids. Flow, Turbulence and Combustion, 1979, 35, 393-407.	0.2	0
147	Some aspects of the "harmonic liquid" away from equilibrium. International Journal of Thermophysics, 1989, 10, 199-210.	1.0	0
148	Noise Suppression in Mesoscopic Structures Due to Long-Range Coulomb Interaction. Physica Status Solidi (B): Basic Research, 1997, 204, 450-452.	0.7	0
149	Breaking of scale invariance symmetry in adsorption processes. Europhysics Letters, 2000, 51, 327-333.	0.7	0
150	Vieri Mastropietro: Non-Perturbative Renormalization. Journal of Statistical Physics, 2009, 134, 793-794.	0.5	0
151	J. Zinn-Justin: Phase Transitions and Renormalization Group. Journal of Statistical Physics, 2009, 134, 795-796.	0.5	0
152	Equilibrium and nonequilibrium thermodynamics of a photon gas in the near field. European Physical Journal: Special Topics, 2019, 227, 2059-2067.	1.2	0
153	Modelling non-equilibrium self-assembly from dissipation. Molecular Physics, 2020, 118, e1761036.	0.8	0