Lendert Gelens

List of Publications by Year
in descending order

103 papers	2,497 citations	186265 28 h-index	214800 47 g-index
113 all docs	113 docs citations	113 times ranked	1902 citing authors

#	Article	IF	Citations
1	Dynamics of one-dimensional Kerr cavity solitons. Optics Express, 2013, 21, 9180.	3.4	189
2	Solitary and coupled semiconductor ring lasers as optical spiking neurons. Physical Review E, 2011, 84, 036209.	2.1	106
3	Dark solitons in the Lugiato-Lefever equation with normal dispersion. Physical Review A, 2016, 93, .	2.5	105
4	Dynamics of localized and patterned structures in the Lugiato-Lefever equation determine the stability and shape of optical frequency combs. Physical Review A, 2014, 89, .	2.5	103
5	Spatial trigger waves: positive feedback gets you a long way. Molecular Biology of the Cell, 2014, 25, 3486-3493.	2.1	99
6	Origin and stability of dark pulse Kerr combs in normal dispersion resonators. Optics Letters, 2016, 41, 2402.	3.3	89
7	High-order dispersion stabilizes dark dissipative solitons in all-fiber cavities. Optics Letters, 2010, 35, 306.	3.3	85
8	The Importance of Kinaseâ€"Phosphatase Integration: Lessons from Mitosis. Trends in Cell Biology, 2018, 28, 6-21.	7.9	85
9	Positive Feedback Keeps Duration of Mitosis Temporally Insulated from Upstream Cell-Cycle Events. Molecular Cell, 2016, 64, 362-375.	9.7	81
10	Third-order chromatic dispersion stabilizes Kerr frequency combs. Optics Letters, 2014, 39, 2971.	3.3	78
11	Exploring Multistability in Semiconductor Ring Lasers: Theory and Experiment. Physical Review Letters, 2009, 102, 193904.	7.8	70
12	An Attachment-Independent Biochemical Timer of the Spindle Assembly Checkpoint. Molecular Cell, 2017, 68, 715-730.e5.	9.7	62
13	Integrated culturing, modeling and transcriptomics uncovers complex interactions and emergent behavior in a three-species synthetic gut community. ELife, 2018, 7, .	6.0	62
14	Coexistence of stable dark- and bright-soliton Kerr combs in normal-dispersion resonators. Physical Review A, 2017, 95, .	2.5	58
15	A General Model for Toxin-Antitoxin Module Dynamics Can Explain Persister Cell Formation in E. coli. PLoS Computational Biology, 2013, 9, e1003190.	3.2	54
16	Excitability in optical systems close to -symmetry. Physics Letters, Section A: General, Atomic and Solid State Physics, 2010, 374, 739-743.	2.1	49
17	Impact of nonlocal interactions in dissipative systems: Towards minimal-sized localized structures. Physical Review A, 2007, 75, .	2.5	48
18	Bifurcation structure of localized states in the Lugiato-Lefever equation with anomalous dispersion. Physical Review E, 2018, 97, 042204.	2.1	48

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19	Exploring the Function of Dynamic Phosphorylation-Dephosphorylation Cycles. Developmental Cell, 2018, 44, 659-663.	7.0	46
20	Two-dimensional phase-space analysis and bifurcation study of the dynamical behaviour of a semiconductor ring laser. Journal of Physics B: Atomic, Molecular and Optical Physics, 2008, 41, 095402.	1.5	45
21	Quadratic soliton combs in doubly resonant second-harmonic generation. Optics Letters, 2018, 43, 6033.	3.3	45
22	Square-wave oscillations in semiconductor ring lasers with delayed optical feedback. Optics Express, 2012, 20, 22503.	3.4	43
23	Topological Insight into the Non-Arrhenius Mode Hopping of Semiconductor Ring Lasers. Physical Review Letters, 2008, 101, 093903.	7.8	42
24	Excitability in semiconductor microring lasers: Experimental and theoretical pulse characterization. Physical Review A, 2010, 82, .	2.5	41
25	Desynchronizing Embryonic Cell Division Waves Reveals the Robustness of Xenopus laevis Development. Cell Reports, 2017, 21, 37-46.	6.4	38
26	Optical injection in semiconductor ring lasers. Physical Review A, 2010, 81, .	2.5	37
27	Dissipative structures in left-handed material cavity optics. Chaos, 2007, 17, 037116.	2.5	35
28	Phase-space approach to directional switching in semiconductor ring lasers. Physical Review E, 2009, 79, 016213.	2.1	32
29	Dynamical instabilities of dissipative solitons in nonlinear optical cavities with nonlocal materials. Physical Review A, 2008, 77, .	2.5	31
30	Multistable and excitable behavior in semiconductor ring lasers with broken Z2-symmetry. European Physical Journal D, 2010, 58, 197-207.	1.3	28
31	Frequency comb generation through the locking of domain walls in doubly resonant dispersive optical parametric oscillators. Optics Letters, 2019, 44, 2004.	3.3	28
32	Interaction of solitons and the formation of bound states in the generalized Lugiato-Lefever equation. European Physical Journal D, 2017, 71, 1.	1.3	27
33	Bistability in a system of two species interacting through mutualism as well as competition: Chemostat vs. Lotka-Volterra equations. PLoS ONE, 2018, 13, e0197462.	2.5	27
34	Formation of localized structures in bistable systems through nonlocal spatial coupling. I. General framework. Physical Review E, 2014, 89, 012914.	2.1	26
35	Bistable, Biphasic Regulation of PP2A-B55 Accounts for the Dynamics of Mitotic Substrate Phosphorylation. Current Biology, 2021, 31, 794-808.e6.	3.9	25
36	Nuclei determine the spatial origin of mitotic waves. ELife, 2020, 9, .	6.0	25

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37	Autoregulation of mazEF expression underlies growth heterogeneity in bacterial populations. Nucleic Acids Research, 2018, 46, 2918-2931.	14.5	24
38	Dark localized structures in a cavity filled with a left-handed material. Physical Review A, 2011, 84, .	2.5	23
39	Formation of localized structures in bistable systems through nonlocal spatial coupling. II. The nonlocal Ginzburg-Landau equation. Physical Review E, 2014, 89, 012915.	2.1	23
40	Localized structures in dispersive and doubly resonant optical parametric oscillators. Physical Review E, 2019, 100, 032219.	2.1	23
41	Nonlocality-Induced Front-Interaction Enhancement. Physical Review Letters, 2010, 104, 154101.	7.8	21
42	Effects of inhomogeneities and drift on the dynamics of temporal solitons in fiber cavities and microresonators. Optics Express, 2014, 22, 30943.	3.4	21
43	Direct modulation of semiconductor ring lasers: numerical and asymptotic analysis. Journal of the Optical Society of America B: Optical Physics, 2012, 29, 1983.	2.1	18
44	How Does the Xenopus laevis Embryonic Cell Cycle Avoid Spatial Chaos?. Cell Reports, 2015, 12, 892-900.	6.4	18
45	Optical injection in semiconductor ring lasers: backfire dynamics. Optics Express, 2008, 16, 10968.	3.4	17
46	Bifurcation structure of periodic patterns in the Lugiato-Lefever equation with anomalous dispersion. Physical Review E, 2018, 98, .	2.1	16
47	Origin, bifurcation structure and stability of localized states in Kerr dispersive optical cavities. IMA Journal of Applied Mathematics, 2021, 86, 856-895.	1.6	16
48	Dynamic bistable switches enhance robustness and accuracy of cell cycle transitions. PLoS Computational Biology, 2021, 17, e1008231.	3.2	16
49	Semiconductor ring lasers coupled by a single waveguide. Applied Physics Letters, 2012, 100, 251114.	3.3	15
50	Delay models for the early embryonic cell cycle oscillator. PLoS ONE, 2018, 13, e0194769.	2.5	14
51	A modular approach for modeling the cell cycle based on functional response curves. PLoS Computational Biology, 2021, 17, e1009008.	3.2	11
52	Cavity solitons and localized patterns in a finite-size optical cavity. Physical Review A, 2011, 84, .	2.5	10
53	Oscillations and multistability in two semiconductor ring lasers coupled by a single waveguide. Physical Review A, 2013, 88, .	2.5	10
54	Co-regulation of the antagonistic RepoMan:Aurora-B pair in proliferating cells. Molecular Biology of the Cell, 2020, 31, 419-438.	2.1	9

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55	Localized structures formed through domain wall locking in cavity-enhanced second-harmonic generation. Optics Letters, 2020, 45, 5856.	3.3	9
56	Traveling waves and defects in the complex Swift-Hohenberg equation. Physical Review E, 2011, 84, 056203.	2.1	8
57	Coordination of Timers and Sensors in Cell Signaling. BioEssays, 2019, 41, e1800217.	2.5	8
58	Coarsening and frozen faceted structures in the supercritical complex Swift-Hohenberg equation. European Physical Journal D, 2010, 59, 23-36.	1.3	7
59	Travelling fronts in time-delayed reactionâ€"diffusion systems. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20180127.	3.4	6
60	Mutualistic cross-feeding in microbial systems generates bistability via an Allee effect. Scientific Reports, 2020, 10, 7763.	3.3	6
61	Synchronizing an oscillatory medium: The speed of pacemaker-generated waves. Physical Review Research, 2020, 2, .	3.6	6
62	Faceting and coarsening dynamics in the complex Swift-Hohenberg equation. Physical Review E, 2009, 80, 046221.	2.1	5
63	Competition between drift and spatial defects leads to oscillatory and excitable dynamics of dissipative solitons. Physical Review E, 2016, 93, 012211.	2.1	5
64	Synchronization in reactionâ€"diffusion systems with multiple pacemakers. Chaos, 2020, 30, 053139.	2.5	5
65	Computational Methods to Model Persistence. Methods in Molecular Biology, 2016, 1333, 207-240.	0.9	4
66	Asymptotic approach to the analysis of mode-hopping in semiconductor ring lasers. Physical Review A, 2009, 80, .	2.5	2
67	Experimental and numerical study of square wave oscillations due to asymmetric optical feedback in semiconductor ring lasers. , 2012, , .		2
68	Semiconductor ring lasers as optical neurons. Proceedings of SPIE, 2012, , .	0.8	2
69	Front interaction induces excitable behavior. Physical Review E, 2017, 95, 020201.	2.1	2
70	Eternal sunshine of the spotless cycle. Molecular Systems Biology, 2019, 15, e8864.	7.2	2
71	Excitable dynamics through toxin-induced mRNA cleavage in bacteria. PLoS ONE, 2019, 14, e0212288.	2.5	2
72	Mitotic waves in an import-diffusion model with multiple nuclei in a shared cytoplasm. BioSystems, 2021, 208, 104478.	2.0	2

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73	Analysis of multistability in semiconductor ring lasers. Proceedings of SPIE, 2010, , .	0.8	1
74	Cavity soliton oscillations in a one-dimensional fiber resonator. , 2012, , .		1
75	Modeling Kerr frequency combs using the Lugiato-Lefever equation: a characterization of the multistable landscape. , 2014, , .		1
76	Bifurcation Structure of Localized Patterns and Spikes in Dispersive Kerr Cavities. , 2019, , .		1
77	Analytical approximations for the speed of pacemaker-generated waves. Physical Review E, 2021, 104, 014220.	2.1	1
78	Sub-diffraction-limited localized structures: influence of linear non-local interactions. , 2008, , .		0
79	The dynamic behavior of a semiconductor ring laser. , 2008, , .		0
80	Directional mode hopping in semiconductor ring lasers. , 2009, , .		0
81	Dynamical regimes in an optically injected semiconductor ring laser. , 2010, , .		0
82	Theoretical and experimental investigation of mode-hopping in semiconductor ring lasers. , 2010, , .		0
83	Study of excitability in semiconductor ring lasers: theory and experiment. Proceedings of SPIE, 2010, , .	0.8	0
84	Dynamical behavior of semiconductor ring lasers. , 2011, , .		0
85	Semiconductor ring lasers as optical neurons. , 2012, , .		0
86	Nonlinear dynamics in directly modulated semiconductor ring lasers. , 2012, , .		0
87	Coupled semiconductor ring lasers. , 2012, , .		0
88	Coupled semiconductor ring lasers. , 2012, , .		0
89	Spatio-temporal stability of 1D Kerr cavity solitons. , 2014, , .		0
90	Two semiconductor ring lasers coupled by a single-waveguide for optical memory operation. Proceedings of SPIE, 2014, , .	0.8	0

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91	Characterizing the dynamics of cavity solitons and frequency combs in the Lugiato-Lefever equation. , 2016, , .		0
92	Localized Structures in Dispersive Doubly Resonant Optical Parametric Oscillators. , 2019, , .		0
93	Bright and dark localized states in doubly resonant optical parametric oscillators. , 2021, , .		0
94	Stabilization of frequency combs using third order dispersion. , 2014, , .		0
95	Stability Analysis of Dark Pulse Kerr Frequency Combs in Normal Dispersion Optical Microresonators. , 2016, , .		0
96	Origin and stability of dark pulse Kerr frequency combs in normal dispersion microresonators. , 2016, , .		0
97	Temporal localized structures in doubly resonant dispersive optical parametric oscillators. , 2020, , .		0
98	Dynamic bistable switches enhance robustness and accuracy of cell cycle transitions. , 2021, 17, e1008231.		0
99	Dynamic bistable switches enhance robustness and accuracy of cell cycle transitions. , 2021, 17, e1008231.		0
100	Dynamic bistable switches enhance robustness and accuracy of cell cycle transitions. , 2021, 17, e1008231.		0
101	Dynamic bistable switches enhance robustness and accuracy of cell cycle transitions. , 2021, 17, e1008231.		0
102	Dynamic bistable switches enhance robustness and accuracy of cell cycle transitions. , 2021, 17, e1008231.		0
103	Dynamic bistable switches enhance robustness and accuracy of cell cycle transitions. , 2021, 17, e1008231.		0