

# Vickie E Lynch

## List of Publications by Year in descending order

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128  
papers

7,211  
citations

101543

36  
h-index

58581

82  
g-index

136  
all docs

136  
docs citations

136  
times ranked

5800  
citing authors

#	ARTICLE	IF	CITATIONS
1	Mantida€ Data analysis and visualization package for neutron scattering and $\sqrt{4}$ SR experiments. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2014, 764, 156-166.	1.6	1,257
2	Complex systems analysis of series of blackouts: Cascading failure, critical points, and self-organization. Chaos, 2007, 17, 026103.	2.5	683
3	Critical points and transitions in an electric power transmission model for cascading failure blackouts. Chaos, 2002, 12, 985-994.	2.5	458
4	Criticality in a cascading failure blackout model. International Journal of Electrical Power and Energy Systems, 2006, 28, 627-633.	5.5	265
5	Anomalous diffusion and exit time distribution of particle tracers in plasma turbulence model. Physics of Plasmas, 2001, 8, 5096-5103.	1.9	239
6	Fractional diffusion in plasma turbulence. Physics of Plasmas, 2004, 11, 3854-3864.	1.9	223
7	Numerical methods for the solution of partial differential equations of fractional order. Journal of Computational Physics, 2003, 192, 406-421.	3.8	213
8	Disturbances in a power transmission system. Physical Review E, 2000, 61, 4877-4882.	2.1	208
9	Nondiffusive Transport in Plasma Turbulence: A Fractional Diffusion Approach. Physical Review Letters, 2005, 94, 065003.	7.8	203
10	A model realization of self-organized criticality for plasma confinement. Physics of Plasmas, 1996, 3, 2903-2911.	1.9	196
11	Complex dynamics of blackouts in power transmission systems. Chaos, 2004, 14, 643-652.	2.5	190
12	Front Dynamics in Reaction-Diffusion Systems with Levy Flights: A Fractional Diffusion Approach. Physical Review Letters, 2003, 91, 018302.	7.8	175
13	The Advanced Toroidal Facility. Fusion Science and Technology, 1986, 10, 179-226.	0.6	150
14	Fluctuation-induced flux at the plasma edge in toroidal devices. Physics of Plasmas, 1996, 3, 2664-2672.	1.9	139
15	Exploring Complex Systems Aspects of Blackout Risk and Mitigation. IEEE Transactions on Reliability, 2011, 60, 134-143.	4.6	107
16	Electron diamagnetic effects on the resistive pressure-gradient-driven turbulence and poloidal flow generation. Physics of Fluids B, 1991, 3, 1438-1444.	1.7	91
17	Numerical calculations using the full MHD equations in toroidal geometry. Journal of Computational Physics, 1986, 63, 107-129.	3.8	82
18	Integration of neutron time-of-flight single-crystal Bragg peaks in reciprocal space. Journal of Applied Crystallography, 2014, 47, 915-921.	4.5	82

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19	Resistive pressureâ€gradientâ€driven turbulence with selfâ€consistent flow profile evolution. Physics of Fluids B, 1993, 5, 1491-1505.	1.7	69
20	Intermittency of plasma edge fluctuation data: Multifractal analysis. Physics of Plasmas, 2000, 7, 3278-3287.	1.9	68
21	Compressible linear and nonlinear resistive MHD calculations in toroidal geometry. Journal of Computational Physics, 1990, 86, 270-293.	3.8	63
22	Equilibrium and stability properties of high-beta torsatrons. Physics of Fluids, 1983, 26, 3569.	1.4	61
23	Blackout mitigation assessment in power transmission systems. , 2003, , .		61
24	Additional evidence for the universality of the probability distribution of turbulent fluctuations and fluxes in the scrape-off layer region of fusion plasmas. Physics of Plasmas, 2005, 12, 052507.	1.9	58
25	Nonlinear dynamics of tearing modes in the reversed field pinch. Physics of Fluids, 1988, 31, 1166.	1.4	56
26	Structure and properties of the electrostatic fluctuations in the far scrape-off layer region of Alcator C-Mod. Physics of Plasmas, 2001, 8, 3702-3707.	1.9	56
27	Modeling blackout dynamics in power transmission networks with simple structure. , 0, , .		55
28	Second stability in the ATF torsatron. Physical Review Letters, 1989, 63, 1249-1252.	7.8	54
29	Anomalous diffusion in a running sandpile model. Physical Review E, 1999, 60, 4770-4778.	2.1	52
30	Sheared flow amplification by vacuum magnetic islands in stellarator plasmas. Physics of Plasmas, 2001, 8, 4111-4119.	1.9	50
31	Bootstrap current control in stellarators. Physics of Fluids B, 1989, 1, 1663-1670.	1.7	49
32	Front propagation and segregation in a reactionâ€diffusion model with cross-diffusion. Physica D: Nonlinear Phenomena, 2002, 168-169, 45-60.	2.8	48
33	Bootstrap-current experiments in a toroidal plasma-confinement device. Physical Review Letters, 1991, 66, 707-710.	7.8	46
34	Interdependent Risk in Interacting Infrastructure Systems. , 2007, , .		44
35	Magnetohydrodynamic Instability with Neutral-Beam Heating in the ISX-BTokamak. Physical Review Letters, 1982, 48, 538-541.	7.8	43
36	Dynamics of secondâ€order phase transitions in resistive pressureâ€gradientâ€driven turbulence. Physics of Plasmas, 1995, 2, 2744-2752.	1.9	43

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37	Renormalization of tracer turbulence leading to fractional differential equations. Physical Review E, 2006, 74, 016305.	2.1	43
38	ESTIMATING FAILURE PROPAGATION IN MODELS OF CASCADING BLACKOUTS. Probability in the Engineering and Informational Sciences, 2005, 19, 475-488.	0.8	42
39	An Estimator of Propagation of Cascading Failure. , 2006, , .		41
40	Dynamics, criticality and self-organization in a model for blackouts in power transmission systems. , 0, , .		39
41	Low-aspect-ratio torsatron configurations. Nuclear Fusion, 1988, 28, 1195-1207.	3.5	38
42	Nonlinear MHD analysis for LHD plasmas. Nuclear Fusion, 2003, 43, 1101-1109.	3.5	37
43	BCYCLIC: A parallel block tridiagonal matrix cyclic solver. Journal of Computational Physics, 2010, 229, 6392-6404.	3.8	37
44	J* optimization of small aspect ratio stellarator/tokamak hybrid devices. Physics of Plasmas, 1998, 5, 1752-1758.	1.9	34
45	Expanding Lorentz and spectrum corrections to large volumes of reciprocal space for single-crystal time-of-flight neutron diffraction. Journal of Applied Crystallography, 2016, 49, 497-506.	4.5	34
46	Resistive MHD studies of high $\beta^2$ tokamak plasmas. Computer Physics Communications, 1981, 24, 465-476.	7.5	31
47	Zero-current high-beta stellarator equilibria with rotational transform profile control. Nuclear Fusion, 1984, 24, 1347-1355.	3.5	31
48	The calculation of stellarator equilibria in vacuum flux surface coordinates. Journal of Computational Physics, 1985, 60, 76-96.	3.8	28
49	Nonlinear interaction of tearing modes: A comparison between the tokamak and the reversed field pinch configurations. Physics of Fluids, 1985, 28, 261-270.	1.4	27
50	Dissipative trapped electron modes in $n=2$ torsatrons. Physics of Fluids B, 1992, 4, 2894-2906.	1.7	27
51	Improving the accuracy and resolution of neutron crystallographic data by three-dimensional profile fitting of Bragg peaks in reciprocal space. Acta Crystallographica Section D: Structural Biology, 2018, 74, 1085-1095.	2.3	27
52	Low- $\epsilon$ stability calculations for three-dimensional stellarator configurations. Physics of Fluids B, 1990, 2, 2162-2167.	1.7	25
53	Transport Optimization and MHD Stability of a Small Aspect Ratio Toroidal Hybrid Stellarator. Physical Review Letters, 1998, 80, 528-531.	7.8	25
54	BraggNet: integrating Bragg peaks using neural networks. Journal of Applied Crystallography, 2019, 52, 854-863.	4.5	25

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55	Finite $\hat{I}^2$ effects on the nonlinear evolution of the ( $m = 1$ ; $n = 1$ ) mode in tokamaks. Physics of Fluids, 1982, 25, 800.	1.4	24
56	Nonlinear evolution of the internal kink mode in toroidal geometry for shaped tokamak plasmas. Physics of Fluids, 1988, 31, 1202.	1.4	24
57	PANORAMA: An approach to performance modeling and diagnosis of extreme-scale workflows. International Journal of High Performance Computing Applications, 2017, 31, 4-18.	3.7	24
58	Bifurcations and modulational interaction in negative compressibility turbulence. Physics of Plasmas, 1994, 1, 2700-2710.	1.9	22
59	Recent results from the ATF torsatron. Physics of Fluids B, 1991, 3, 2261-2269.	1.7	19
60	Topological instability along filamented invariant surfaces. Chaos, 2003, 13, 1175-1187.	2.5	19
61	Tokamak $m=1$ magnetohydrodynamic calculations in toroidal geometry using a full set of nonlinear resistive magnetohydrodynamic equations. Physics of Fluids, 1988, 31, 347.	1.4	18
62	Second stability in the ATF torsatron—Experiment and theory. Physics of Fluids B, 1990, 2, 1353-1358.	1.7	18
63	Ideal low- $n$ and Mercier mode stability boundaries for $\hat{a}_n = 2$ torsatrons. Nuclear Fusion, 1989, 29, 2079-2091.	3.5	17
64	Ideal Mercier stability for the TJ-II flexible Helic. Nuclear Fusion, 1990, 30, 2597-2609.	3.5	17
65	Quiet-time statistics: A tool to probe the dynamics of self-organized-criticality systems from within the strong overlapping regime. Physical Review E, 2002, 66, 036124.	2.1	16
66	Equilibrium studies for low-aspect-ratio torsatrons. Nuclear Fusion, 1984, 24, 115-129.	3.5	15
67	Linear and nonlinear properties of infernal modes. Physics of Fluids B, 1990, 2, 1574-1583.	1.7	15
68	Effect of a poloidal shear flow on the probability of accessing the multiple saturated states in the resistive interchange instability. Physics of Fluids B, 1993, 5, 1795-1803.	1.7	15
69	Full torus Landau fluid calculations of ion temperature gradient-driven turbulence in cylindrical geometry. Physics of Plasmas, 2000, 7, 5013-5022.	1.9	15
70	Tearing-mode stability of tokamak plasmas with elliptical cross-section. Nuclear Fusion, 1981, 21, 511-517.	3.5	14
71	Non-linear analysis of disruptions in the JIPP T-II tokamak. Nuclear Fusion, 1982, 22, 117-121.	3.5	14
72	Equilibrium, Stability, and Deeply Trapped Energetic Particle Confinement Calculations for $l = 2$ Torsatron/Heliotron Configurations. Fusion Science and Technology, 1991, 19, 217-233.	0.6	14

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73	Internal disruptions in Heliotron E*. Physics of Plasmas, 1998, 5, 3700-3707.	1.9	14
74	Spatiotemporal structure of resistive pressure-gradient-driven turbulence. Physics of Plasmas, 1999, 6, 107-115.	1.9	14
75	Radiation-driven turbulence at the plasma edge in toroidal devices. Physics of Plasmas, 1994, 1, 3871-3882.	1.9	13
76	Toward an End-to-End Framework for Modeling, Monitoring and Anomaly Detection for Scientific Workflows. , 2016, , .		13
77	End-to-end online performance data capture and analysis for scientific workflows. Future Generation Computer Systems, 2021, 117, 387-400.	7.5	13
78	Torsatron equilibrium and stability studies. Nuclear Fusion, 1985, 25, 1463-1473.	3.5	12
79	Studies of a Flexible Helic Configuration. Fusion Science and Technology, 1988, 13, 521-535.	0.6	12
80	Analyzing diffuse scattering with supercomputers. Journal of Applied Crystallography, 2013, 46, 1616-1625.	4.5	12
81	A comparison of the full and reduced sets of magnetohydrodynamic equations for resistive tearing modes in cylindrical geometry. Physics of Fluids, 1983, 26, 2569.	1.4	11
82	Stellarator expansion methods for MHD equilibrium and stability Calculations. Journal of Computational Physics, 1986, 66, 411-444.	3.8	11
83	Theoretical analysis of the role of the infernal mode in the stability of peaked pressure profiles in pellet fuelled JET discharges. Nuclear Fusion, 1991, 31, 1835-1842.	3.5	11
84	Reynolds stress and shear flow generation. Plasma Physics and Controlled Fusion, 2001, 43, 1377-1395.	2.1	11
85	Design studies of low aspect ratio quasi-omnigenous stellarators. Nuclear Fusion, 2000, 40, 563-567.	3.5	10
86	An automated analysis workflow for optimization of force-field parameters using neutron scattering data. Journal of Computational Physics, 2017, 340, 128-137.	3.8	10
87	Toroidal field effects on the stability of a Heliotron configuration. Physics of Fluids, 1986, 29, 3356.	1.4	9
88	Linear and nonlinear resistive magnetohydrodynamic stability of tokamak discharges with negative central shear. Physics of Plasmas, 2001, 8, 3358-3366.	1.9	9
89	Effect of $\hat{A}$ and collisionality on the vacuum magnetic field islands in stellarators. Nuclear Fusion, 2003, 43, 553-557.	3.5	9
90	Topological instability along invariant surfaces and pseudochaotic transport. Physical Review E, 2005, 72, 026227.	2.1	9

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91	On the use of critical gradient models in fusion plasma transport studies. Physics of Plasmas, 2006, 13, 062301.	1.9	9
92	Molecular Dynamics Force-Field Refinement against Quasi-Elastic Neutron Scattering Data. Journal of Chemical Theory and Computation, 2016, 12, 9-17.	5.3	9
93	Role of rational surfaces on fluctuations and transport in the plasma edge of the TJ-II stellarator. European Physical Journal D, 2000, 50, 1463-1470.	0.4	8
94	Resistive pressure gradient-driven turbulence at stellarator plasma edge. Physics of Plasmas, 1997, 4, 3282-3292.	1.9	7
95	On the applicability of local asymptotic stability criteria to stellarator stability. Physics of Plasmas, 2001, 8, 990-996.	1.9	7
96	Avalanche structure in a running sandpile model. Physical Review E, 2002, 66, 011302.	2.1	7
97	Resistive pressure-gradient-driven instabilities in the transition regime to fully developed turbulence. Physics of Plasmas, 2002, 9, 47-54.	1.9	7
98	High confinement modes with radial structure. Plasma Physics and Controlled Fusion, 2004, 46, A105-A112.	2.1	7
99	Evaluating the Effect of Upgrade, Control and Development Strategies on Robustness and Failure Risk of the Power Transmission Grid. , 2008, , .		7
100	Constrained Ripple Optimization of Tokamak Bundle Divertors. Nuclear Technology/Fusion, 1982, 2, 372-391.	0.5	6
101	Stability Properties of the URAGAN-2M Torsatron. Fusion Science and Technology, 1993, 23, 71-78.	0.6	6
102	Effect of poloidally asymmetric sheared flow on resistive ballooning turbulence. Physics of Plasmas, 1999, 6, 3910-3917.	1.9	6
103	Growth and propagation of disturbances in a communication network model. , 0, , .		6
104	An introduction to programming multiple-processor computers. Journal of Computational Physics, 1986, 63, 140-156.	3.8	5
105	Pulse propagation in a simple probabilistic transport model. Nuclear Fusion, 2007, 47, 189-195.	3.5	5
106	Particles and field lines outside the ATF plasma. Journal of Nuclear Materials, 1984, 121, 415-421.	2.7	3
107	Plasma Turbulence Calculations On Supercomputers. The International Journal of Supercomputer Applications, 1990, 4, 97-110.	0.5	3
108	Determination of long-range correlations by quiet-time statistics. Physics of Plasmas, 2005, 12, 052304.	1.9	3

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109	The SNS/HFIR Web Portal System for SANS. Journal of Physics: Conference Series, 2010, 247, 012013.	0.4	3
110	Thresholds and Complex Dynamics of Interdependent Cascading Infrastructure Systems. Understanding Complex Systems, 2014, , 95-114.	0.6	3
111	Volumetric Segmentation via Neural Networks Improves Neutron Crystallography Data Analysis. , 2019, 2019, 549-555.		3
112	Ultra Low Aspect Ratio Stellarator or Hybrid Configurations. Fusion Science and Technology, 1996, 30, 1347-1354.	0.6	3
113	Heliac equilibria. Nuclear Fusion, 1987, 27, 2161-2170.	3.5	2
114	Resistive magnetohydrodynamic stability of stellarators with increasing plasma pressure. Physics of Fluids B, 1991, 3, 2028-2037.	1.7	2
115	Quasilinear evolution of non-thermal distributions in ion cyclotron resonance heating of tokamak plasmas. Journal of Physics: Conference Series, 2006, 46, 82-86.	0.4	2
116	Simulation of wave interactions with MHD. Journal of Physics: Conference Series, 2008, 125, 012039.	0.4	2
117	Advances in simulation of wave interactions with extended MHD phenomena. Journal of Physics: Conference Series, 2009, 180, 012054.	0.4	2
118	The SNS/HFIR Web Portal System “ How Can it Help Me?. Journal of Physics: Conference Series, 2010, 251, 012096.	0.4	2
119	Plasma turbulence calculations on the intel iPSC/860 (RX) hypercube. Computing Systems in Engineering: an International Journal, 1991, 2, 299-305.	0.5	1
120	Multi-CPU plasma fluid turbulence calculations on a Cray Y-MP C90. , 1993, , .		1
121	Distributed workflows for modeling experimental data. , 2017, , .		1
122	Integrating Advanced Materials Simulation Techniques into an Automated Data Analysis Workflow at the Spallation Neutron Source. , 2014, , 297-308.		1
123	Full-wave calculations in flux coordinates for toroidal geometry. Journal of Computational Physics, 1990, 88, 183-204.	3.8	0
124	Performance of a plasma fluid code on the Intel parallel computers. , 0, , .		0
125	Numerical Tokamak Turbulence calculations on the CRAY T3E. , 1997, , .		0
126	Neutron Science TeraGrid Gateway. Journal of Physics: Conference Series, 2010, 251, 012097.	0.4	0

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127	Networking and Leisure Talk at ACNS 2016. Neutron News, 2016, 27, 11-12.	0.2	0
128	Workflow Performance Profiles: Development and Analysis. Lecture Notes in Computer Science, 2017, , 108-120.	1.3	0