

# Nancy K Nichols

## List of Publications by Year in descending order

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79  
papers

3,907  
citations

159358

30  
h-index

133063

59  
g-index

79  
all docs

79  
docs citations

79  
times ranked

2424  
citing authors

#	ARTICLE	IF	CITATIONS
1	Data assimilation with correlated observation errors: experiments with a 1-D shallow water model. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 65, 19546.	0.8	71
2	Estimating correlated observation error statistics using an ensemble transform Kalman filter. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 66, 23294.	0.8	30
3	Improving the condition number of estimated covariance matrices. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 72, 1696646.	0.8	13
4	New bounds on the condition number of the Hessian of the preconditioned variational data assimilation problem. Numerical Linear Algebra With Applications, 2022, 29, e2405.	0.9	3
5	Reducing transatlantic flight emissions by fuel-optimised routing. Environmental Research Letters, 2021, 16, 025002.	2.2	19
6	Assimilation of probabilistic flood maps from SAR data into a coupled hydrologicâ€“hydraulic forecasting model: a proof of concept. Hydrology and Earth System Sciences, 2021, 25, 4081-4097.	1.9	21
7	The role of crossâ€“domain error correlations in strongly coupled 4Dâ€“Var atmosphereâ€“ocean data assimilation. Quarterly Journal of the Royal Meteorological Society, 2020, 146, 2450-2465.	1.0	4
8	A new multivariable benchmark for Last Glacial Maximum climate simulations. Climate of the Past, 2020, 16, 699-712.	1.3	17
9	The impact of using reconditioned correlated observationâ€“error covariance matrices in the Met Office 1Dâ€“Var system. Quarterly Journal of the Royal Meteorological Society, 2020, 146, 1372-1390.	1.0	8
10	Observation operators for assimilation of satellite observations in fluvial inundation forecasting. Hydrology and Earth System Sciences, 2019, 23, 2541-2559.	1.9	21
11	A pragmatic strategy for implementing spatially correlated observation errors in an operational system: An application to Doppler radial winds. Quarterly Journal of the Royal Meteorological Society, 2019, 145, 2772-2790.	1.0	23
12	Improvements in Forecasting Intense Rainfall: Results from the FRANC (Forecasting Rainfall Exploiting) Tj ETQq0 0 0 rgBT /Overlock 10 T 10, 125.	1.0	21
13	The conditioning of leastâ€“squares problems in variational data assimilation. Numerical Linear Algebra With Applications, 2018, 25, e2165.	0.9	18
14	Treating Sample Covariances for Use in Strongly Coupled Atmosphereâ€“Ocean Data Assimilation. Geophysical Research Letters, 2018, 45, 445-454.	1.5	18
15	On the representation error in data assimilation. Quarterly Journal of the Royal Meteorological Society, 2018, 144, 1257-1278.	1.0	202
16	Technical note: Assessment of observation quality for data assimilation in flood models. Hydrology and Earth System Sciences, 2018, 22, 3983-3992.	1.9	10
17	Observation impact, domain length and parameter estimation in data assimilation for flood forecasting. Environmental Modelling and Software, 2018, 104, 199-214.	1.9	20
18	Decadal climate prediction with a refined anomaly initialisation approach. Climate Dynamics, 2017, 48, 1841-1853.	1.7	7

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19	Understanding the effect of disturbance from selective felling on the carbon dynamics of a managed woodland by combining observations with model predictions. <i>Journal of Geophysical Research G: Biogeosciences</i> , 2017, 122, 886-902.	1.3	12
20	Diagnosing atmospheric motion vector observation errors for an operational high-resolution data assimilation system. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2017, 143, 333-341.	1.0	51
21	On diagnosing observation error statistics with local ensemble data assimilation. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2017, 143, 2677-2686.	1.0	22
22	Estimating Forecast Error Covariances for Strongly Coupled Atmosphere-Ocean 4D-Var Data Assimilation. <i>Monthly Weather Review</i> , 2017, 145, 4011-4035.	0.5	20
23	Data assimilation for moving mesh methods with an application to ice sheet modelling. <i>Nonlinear Processes in Geophysics</i> , 2017, 24, 515-534.	0.6	9
24	Diagnosing Horizontal and Inter-Channel Observation Error Correlations for SEVIRI Observations Using Observation-Minus-Background and Observation-Minus-Analysis Statistics. <i>Remote Sensing</i> , 2016, 8, 581.	1.8	50
25	Diagnosing Observation Error Correlations for Doppler Radar Radial Winds in the Met Office UKV Model Using Observation-Minus-Background and Observation-Minus-Analysis Statistics. <i>Monthly Weather Review</i> , 2016, 144, 3533-3551.	0.5	61
26	Theoretical insight into diagnosing observation error correlations using observation-minus-background and observation-minus-analysis statistics. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2016, 142, 418-431.	1.0	72
27	Investigating the role of prior and observation error correlations in improving a model forecast of forest carbon balance using Four-dimensional Variational data assimilation. <i>Agricultural and Forest Meteorology</i> , 2016, 228-229, 299-314.	1.9	20
28	Application of Data Assimilation to Ocean and Climate Prediction. , 2016, , 3-10.		0
29	Regularization of Descriptor Systems. , 2015, , 415-433.		2
30	Estimating interchannel observation error correlations for <i>IASI</i> radiance data in the Met Office system. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2014, 140, 1236-1244.	1.0	63
31	Representativity error for temperature and humidity using the Met Office high-resolution model. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2014, 140, 1189-1197.	1.0	49
32	Data assimilation for state and parameter estimation: application to morphodynamic modelling. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2013, 139, 314-327.	1.0	40
33	Resolution of sharp fronts in the presence of model error in variational data assimilation. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2013, 139, 742-757.	1.0	21
34	Integration of a 3D variational data assimilation scheme with a coastal area morphodynamic model of Morecambe Bay. <i>Coastal Engineering</i> , 2012, 69, 82-96.	1.7	13
35	Breakdown of hydrostatic balance at convective scales in the forecast errors in the Met Office Unified Model. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2012, 138, 1709-1720.	1.0	17
36	A hybrid data assimilation scheme for model parameter estimation: Application to morphodynamic modelling. <i>Computers and Fluids</i> , 2011, 46, 436-441.	1.3	18

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37	Correlations of control variables in variational data assimilation. Quarterly Journal of the Royal Meteorological Society, 2011, 137, 620-630.	1.0	13
38	Regularization techniques for ill-posed inverse problems in data assimilation. Computers and Fluids, 2011, 46, 168-173.	1.3	22
39	Conditioning and preconditioning of the variational data assimilation problem. Computers and Fluids, 2011, 46, 252-256.	1.3	39
40	State estimation using model order reduction for unstable systems. Computers and Fluids, 2011, 46, 155-160.	1.3	9
41	<i>L</i> <sub>1</sub> -regularisation for ill-posed problems in variational data assimilation. Proceedings in Applied Mathematics and Mechanics, 2010, 10, 665-668.	0.2	15
42	Variational data assimilation for parameter estimation: application to a simple morphodynamic model. Ocean Dynamics, 2009, 59, 697-708.	0.9	23
43	Modelling of forecast errors in geophysical fluid flows. International Journal for Numerical Methods in Fluids, 2008, 56, 1147-1153.	0.9	10
44	Correlated observation errors in data assimilation. International Journal for Numerical Methods in Fluids, 2008, 56, 1521-1527.	0.9	79
45	Unbiased ensemble square root filters. Physica D: Nonlinear Phenomena, 2008, 237, 1021-1028.	1.3	101
46	Using Model Reduction Methods within Incremental Four-Dimensional Variational Data Assimilation. Monthly Weather Review, 2008, 136, 1511-1522.	0.5	32
47	Weak constraints in four-dimensional variational data assimilation. Meteorologische Zeitschrift, 2007, 16, 767-776.	0.5	7
48	Approximate Gauss-Newton Methods for Nonlinear Least Squares Problems. SIAM Journal on Optimization, 2007, 18, 106-132.	1.2	151
49	A Singular Vector Perspective of 4DVAR: The Spatial Structure and Evolution of Baroclinic Weather Systems. Monthly Weather Review, 2006, 134, 3436-3455.	0.5	11
50	Inner-Loop Stopping Criteria for Incremental Four-Dimensional Variational Data Assimilation. Monthly Weather Review, 2006, 134, 3425-3435.	0.5	18
51	A singular vector perspective of 4D-Var: Filtering and interpolation. Quarterly Journal of the Royal Meteorological Society, 2005, 131, 1-19.	1.0	75
52	Robust Pole Assignment in Descriptor Linear Systems via State Feedback. European Journal of Control, 2002, 8, 136-149.	1.6	23
53	Robust Eigenstructure Assignment in Quadratic Matrix Polynomials: Nonsingular Case. SIAM Journal on Matrix Analysis and Applications, 2001, 23, 77-102.	0.7	80
54	Minimum norm regularization of descriptor systems by mixed output feedback. Linear Algebra and Its Applications, 1999, 296, 39-77.	0.4	43

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55	Feedback design for regularizing descriptor systems. <i>Linear Algebra and Its Applications</i> , 1999, 299, 119-151.	0.4	80
56	Bifurcation Analysis of Eigenstructure Assignment Control in a Simple Nonlinear Aircraft Model. <i>Journal of Guidance, Control, and Dynamics</i> , 1998, 21, 792-798.	1.6	11
57	Regularization of descriptor systems by output feedback. <i>IEEE Transactions on Automatic Control</i> , 1994, 39, 1742-1748.	3.6	60
58	Output Feedback in Descriptor Systems. <i>The IMA Volumes in Mathematics and Its Applications</i> , 1994, , 43-53.	0.5	3
59	Optimal growth strategies when mortality and production rates are size-dependent. <i>Evolutionary Ecology</i> , 1993, 7, 576-592.	0.5	45
60	Regularization of Descriptor Systems by Derivative and Proportional State Feedback. <i>SIAM Journal on Matrix Analysis and Applications</i> , 1992, 13, 46-67.	0.7	103
61	Duality, observability, and controllability for linear time-varying descriptor systems. <i>Circuits, Systems, and Signal Processing</i> , 1991, 10, 455-470.	1.2	78
62	Numerical computation of an analytic singular value decomposition of a matrix valued function. <i>Numerische Mathematik</i> , 1991, 60, 1-39.	0.9	130
63	Robust pole assignment in systems subject to structured perturbations. <i>Systems and Control Letters</i> , 1990, 15, 373-380.	1.3	20
64	Robust pole assignment in singular control systems. <i>Linear Algebra and Its Applications</i> , 1989, 121, 9-37.	0.4	83
65	Robustness in partial pole placement. <i>IEEE Transactions on Automatic Control</i> , 1987, 32, 728-732.	3.6	26
66	Numerical Methods for Stiff Two-Point Boundary Value Problems. <i>SIAM Journal on Numerical Analysis</i> , 1986, 23, 325-368.	1.1	50
67	Eigenstructure assignment in descriptor systems. <i>IEEE Transactions on Automatic Control</i> , 1986, 31, 1138-1141.	3.6	97
68	On computational algorithms for pole assignment. <i>IEEE Transactions on Automatic Control</i> , 1986, 31, 643-645.	3.6	10
69	Are patterns of growth adaptive?. <i>Journal of Theoretical Biology</i> , 1985, 112, 553-574.	0.8	139
70	Some necessary and sufficient conditions for eigenstructure assignment. <i>International Journal of Control</i> , 1985, 42, 1457-1468.	1.2	48
71	Robust pole assignment in linear state feedback. <i>International Journal of Control</i> , 1985, 41, 1129-1155.	1.2	950
72	Smoothed histogram modification for image processing. <i>Computer Vision, Graphics, and Image Processing</i> , 1984, 26, 271-291.	1.1	40

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73	Dynamic Market Strategy Under Threat of Competitive Entry: An Analysis of the Pricing and Production Policies Open to the Multinational Company. <i>Journal of Industrial Economics</i> , 1982, 31, 153.	0.6	10
74	Smooth Regrading of Discretized Data. <i>SIAM Journal on Scientific and Statistical Computing</i> , 1982, 3, 145-159.	1.5	4
75	Numerical solution of an elastic boundary layer problem using a multiple shooting technique. <i>Journal of Computational Physics</i> , 1982, 46, 369-389.	1.9	2
76	On the Convergence of Two-Stage Iterative Processes for Solving Linear Equations. <i>SIAM Journal on Numerical Analysis</i> , 1973, 10, 460-469.	1.1	73
77	Generalized consistent ordering and the optimum successive over-relaxation factor. <i>Numerische Mathematik</i> , 1969, 13, 425-433.	0.9	25
78	The role of airspeed variability in fixed-time, fuel-optimal aircraft trajectory planning. <i>Optimization and Engineering</i> , 0, , .	1.3	3
79	The impact of hybrid oceanic data assimilation in a coupled model: a case study of a tropical cyclone. <i>Quarterly Journal of the Royal Meteorological Society</i> , 0, , .	1.0	0