Nancy K Nichols

List of Publications by Year
in descending order

79 papers	3,907 citations	159585 30 h-index	128289 60 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.	1.7	71
2	Estimating correlated observation error statistics using an ensemble transform Kalman filter. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 66, 23294.	1.7	30
3	Improving the condition number of estimated covariance matrices. Tellus, Series A: Dynamic Meteorology and Oceanography, 2022, 72, 1696646.	1.7	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.	1.6	3
5	Reducing transatlantic flight emissions by fuel-optimised routing. Environmental Research Letters, 2021, 16, 025002.	5.2	19
6	Assimilation of probabilistic flood maps from SAR data into a coupled hydrologic–hydraulic forecasting model: a proof of concept. Hydrology and Earth System Sciences, 2021, 25, 4081-4097.	4.9	21
7	The role of cross-domain error correlations in strongly coupled 4D-Var atmosphere–ocean data assimilation. Quarterly Journal of the Royal Meteorological Society, 2020, 146, 2450-2465.	2.7	4
8	A new multivariable benchmark for Last Glacial Maximum climate simulations. Climate of the Past, 2020, 16, 699-712.	3.4	17
9	The impact of using reconditioned correlated observation-error covariance matrices in the Met Office 1D-Var system. Quarterly Journal of the Royal Meteorological Society, 2020, 146, 1372-1390.	2.7	8
10	Observation operators for assimilation of satellite observations in fluvial inundation forecasting. Hydrology and Earth System Sciences, 2019, 23, 2541-2559.	4.9	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.	2.7	23
12	Improvements in Forecasting Intense Rainfall: Results from the FRANC (Forecasting Rainfall Exploiting) Tj ETQq0 0 0 rgBT /Overlock 10 T 10, 125.	2.3	21
13	The conditioning of least-squares problems in variational data assimilation. Numerical Linear Algebra With Applications, 2018, 25, e2165.	1.6	18
14	Treating Sample Covariances for Use in Strongly Coupled Atmosphere-Ocean Data Assimilation. Geophysical Research Letters, 2018, 45, 445-454.	4.0	18
15	On the representation error in data assimilation. Quarterly Journal of the Royal Meteorological Society, 2018, 144, 1257-1278.	2.7	202
16	Technical note: Assessment of observation quality for data assimilation in flood models. Hydrology and Earth System Sciences, 2018, 22, 3983-3992.	4.9	10
17	Observation impact, domain length and parameter estimation in data assimilation for flood forecasting. Environmental Modelling and Software, 2018, 104, 199-214.	4.5	20
18	Decadal climate prediction with a refined anomaly initialisation approach. Climate Dynamics, 2017, 48, 1841-1853.	3.8	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. Journal of Geophysical Research G: Biogeosciences, 2017, 122, 886-902.	3.0	12
20	Diagnosing atmospheric motion vector observation errors for an operational highâ€resolution data assimilation system. Quarterly Journal of the Royal Meteorological Society, 2017, 143, 333-341.	2.7	51
21	On diagnosing observationâ€error statistics with local ensemble data assimilation. Quarterly Journal of the Royal Meteorological Society, 2017, 143, 2677-2686.	2.7	22
22	Estimating Forecast Error Covariances for Strongly Coupled Atmosphereâ€"Ocean 4D-Var Data Assimilation. Monthly Weather Review, 2017, 145, 4011-4035.	1.4	20
23	Data assimilation for moving mesh methods with an application to ice sheet modelling. Nonlinear Processes in Geophysics, 2017, 24, 515-534.	1.3	9
24	Diagnosing Horizontal and Inter-Channel Observation Error Correlations for SEVIRI Observations Using Observation-Minus-Background and Observation-Minus-Analysis Statistics. Remote Sensing, 2016, 8, 581.	4.0	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. Monthly Weather Review, 2016, 144, 3533-3551.	1.4	61
26	Theoretical insight into diagnosing observation error correlations using observationâ€minusâ€background and observationâ€minusâ€analysis statistics. Quarterly Journal of the Royal Meteorological Society, 2016, 142, 418-431.	2.7	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. Agricultural and Forest Meteorology, 2016, 228-229, 299-314.	4.8	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 observationâ€error correlations for <scp>IASI</scp> radiance data in the Met Office systemâ€. Quarterly Journal of the Royal Meteorological Society, 2014, 140, 1236-1244.	2.7	63
31	Representativity error for temperature and humidity using the Met Office highâ€resolution modelâ€. Quarterly Journal of the Royal Meteorological Society, 2014, 140, 1189-1197.	2.7	49
32	Data assimilation for state and parameter estimation: application to morphodynamic modelling. Quarterly Journal of the Royal Meteorological Society, 2013, 139, 314-327.	2.7	40
33	Resolution of sharp fronts in the presence of model error in variational data assimilation. Quarterly Journal of the Royal Meteorological Society, 2013, 139, 742-757.	2.7	21
34	Integration of a 3D variational data assimilation scheme with a coastal area morphodynamic model of Morecambe Bay. Coastal Engineering, 2012, 69, 82-96.	4.0	13
35	Breakdown of hydrostatic balance at convective scales in the forecast errors in the Met Office Unified Model. Quarterly Journal of the Royal Meteorological Society, 2012, 138, 1709-1720.	2.7	17
36	A hybrid data assimilation scheme for model parameter estimation: Application to morphodynamic modelling. Computers and Fluids, 2011, 46, 436-441.	2.5	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.	2.7	13
38	Regularization techniques for ill-posed inverse problems in data assimilation. Computers and Fluids, 2011, 46, 168-173.	2.5	22
39	Conditioning and preconditioning of the variational data assimilation problem. Computers and Fluids, 2011, 46, 252-256.	2.5	39
40	State estimation using model order reduction for unstable systems. Computers and Fluids, 2011, 46, 155-160.	2.5	9
41	L_1â€“regularisation for illâ€“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.	2.2	23
43	Modelling of forecast errors in geophysical fluid flows. International Journal for Numerical Methods in Fluids, 2008, 56, 1147-1153.	1.6	10
44	Correlated observation errors in data assimilation. International Journal for Numerical Methods in Fluids, 2008, 56, 1521-1527.	1.6	79
45	Unbiased ensemble square root filters. Physica D: Nonlinear Phenomena, 2008, 237, 1021-1028.	2.8	101
46	Using Model Reduction Methods within Incremental Four-Dimensional Variational Data Assimilation. Monthly Weather Review, 2008, 136, 1511-1522.	1.4	32
47	Weak constraints in four-dimensional variational data assimilation. Meteorologische Zeitschrift, 2007, 16, 767-776.	1.0	7
48	Approximate Gaussâ€"Newton Methods for Nonlinear Least Squares Problems. SIAM Journal on Optimization, 2007, 18, 106-132.	2.0	151
49	A Singular Vector Perspective of 4DVAR: The Spatial Structure and Evolution of Baroclinic Weather Systems. Monthly Weather Review, 2006, 134, 3436-3455.	1.4	11
50	Inner-Loop Stopping Criteria for Incremental Four-Dimensional Variational Data Assimilation. Monthly Weather Review, 2006, 134, 3425-3435.	1.4	18
51	A singular vector perspective of 4D-Var: Filtering and interpolation. Quarterly Journal of the Royal Meteorological Society, 2005, 131, 1-19.	2.7	75
52	Robust Pole Assignment in Descriptor Linear Systems via State Feedback. European Journal of Control, 2002, 8, 136-149.	2.6	23
53	Robust Eigenstructure Assignment in Quadratic Matrix Polynomials: Nonsingular Case. SIAM Journal on Matrix Analysis and Applications, 2001, 23, 77-102.	1.4	80
54	Minimum norm regularization of descriptor systems by mixed output feedback. Linear Algebra and Its Applications, 1999, 296, 39-77.	0.9	43

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55	Feedback design for regularizing descriptor systems. Linear Algebra and Its Applications, 1999, 299, 119-151.	0.9	80
56	Bifurcation Analysis of Eigenstructure Assignment Control in a Simple Nonlinear Aircraft Model. Journal of Guidance, Control, and Dynamics, 1998, 21, 792-798.	2.8	11
57	Regularization of descriptor systems by output feedback. IEEE Transactions on Automatic Control, 1994, 39, 1742-1748.	5.7	60
58	Output Feedback in Descriptor Systems. The IMA Volumes in Mathematics and Its Applications, 1994, , 43-53.	0.5	3
59	Optimal growth strategies when mortality and production rates are size-dependent. Evolutionary Ecology, 1993, 7, 576-592.	1.2	45
60	Regularization of Descriptor Systems by Derivative and Proportional State Feedback. SIAM Journal on Matrix Analysis and Applications, 1992, 13, 46-67.	1.4	103
61	Duality, observability, and controllability for linear time-varying descriptor systems. Circuits, Systems, and Signal Processing, 1991, 10, 455-470.	2.0	78
62	Numerical computation of an analytic singular value decomposition of a matrix valued function. Numerische Mathematik, 1991, 60, 1-39.	1.9	130
63	Robust pole assignment in systems subject to structured perturbations. Systems and Control Letters, 1990, 15, 373-380.	2.3	20
64	Robust pole assignment in singular control systems. Linear Algebra and Its Applications, 1989, 121, 9-37.	0.9	83
65	Robustness in partial pole placement. IEEE Transactions on Automatic Control, 1987, 32, 728-732.	5.7	26
66	Numerical Methods for Stiff Two-Point Boundary Value Problems. SIAM Journal on Numerical Analysis, 1986, 23, 325-368.	2.3	50
67	Eigenstructure assignment in descriptor systems. IEEE Transactions on Automatic Control, 1986, 31, 1138-1141.	5.7	97
68	On computational algorithms for pole assignment. IEEE Transactions on Automatic Control, 1986, 31, 643-645.	5.7	10
69	Are patterns of growth adaptive?. Journal of Theoretical Biology, 1985, 112, 553-574.	1.7	139
70	Some necessary and sufficient conditions for eigenstructure assignment. International Journal of Control, 1985, 42, 1457-1468.	1.9	48
71	Robust pole assignment in linear state feedback. International Journal of Control, 1985, 41, 1129-1155.	1.9	950
72	Smoothed histogram modification for image processing. Computer Vision, Graphics, and Image Processing, 1984, 26, 271-291.	1.0	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. Journal of Industrial Economics, 1982, 31, 153.	1.3	10
74	Smooth Regrading of Discretized Data. SIAM Journal on Scientific and Statistical Computing, 1982, 3, 145-159.	1.5	4
75	Numerical solution of an elastic boundary layer problem using a multiple shooting technique. Journal of Computational Physics, 1982, 46, 369-389.	3.8	2
76	On the Convergence of Two-Stage Iterative Processes for Solving Linear Equations. SIAM Journal on Numerical Analysis, 1973, 10, 460-469.	2.3	73
77	Generalized consistent ordering and the optimum successive over-relaxation factor. Numerische Mathematik, 1969, 13, 425-433.	1.9	25
78	The role of airspeed variability in fixed-time, fuel-optimal aircraft trajectory planning. Optimization and Engineering, 0, , .	2.4	3
79	The impact of hybrid oceanic data assimilation in a coupled model: a case study of a tropical cyclone. Quarterly Journal of the Royal Meteorological Society, 0, , .	2.7	0