

Nancy K Nichols

List of Publications by Year in descending order

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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	Robust pole assignment in linear state feedback. <i>International Journal of Control</i> , 1985, 41, 1129-1155.	1.9	950
2	On the representation error in data assimilation. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2018, 144, 1257-1278.	2.7	202
3	Approximate Gauss-Newton Methods for Nonlinear Least Squares Problems. <i>SIAM Journal on Optimization</i> , 2007, 18, 106-132.	2.0	151
4	Are patterns of growth adaptive?. <i>Journal of Theoretical Biology</i> , 1985, 112, 553-574.	1.7	139
5	Numerical computation of an analytic singular value decomposition of a matrix valued function. <i>Numerische Mathematik</i> , 1991, 60, 1-39.	1.9	130
6	Regularization of Descriptor Systems by Derivative and Proportional State Feedback. <i>SIAM Journal on Matrix Analysis and Applications</i> , 1992, 13, 46-67.	1.4	103
7	Unbiased ensemble square root filters. <i>Physica D: Nonlinear Phenomena</i> , 2008, 237, 1021-1028.	2.8	101
8	Eigenstructure assignment in descriptor systems. <i>IEEE Transactions on Automatic Control</i> , 1986, 31, 1138-1141.	5.7	97
9	Robust pole assignment in singular control systems. <i>Linear Algebra and Its Applications</i> , 1989, 121, 9-37.	0.9	83
10	Feedback design for regularizing descriptor systems. <i>Linear Algebra and Its Applications</i> , 1999, 299, 119-151.	0.9	80
11	Robust Eigenstructure Assignment in Quadratic Matrix Polynomials: Nonsingular Case. <i>SIAM Journal on Matrix Analysis and Applications</i> , 2001, 23, 77-102.	1.4	80
12	Correlated observation errors in data assimilation. <i>International Journal for Numerical Methods in Fluids</i> , 2008, 56, 1521-1527.	1.6	79
13	Duality, observability, and controllability for linear time-varying descriptor systems. <i>Circuits, Systems, and Signal Processing</i> , 1991, 10, 455-470.	2.0	78
14	A singular vector perspective of 4D-Var: Filtering and interpolation. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2005, 131, 1-19.	2.7	75
15	On the Convergence of Two-Stage Iterative Processes for Solving Linear Equations. <i>SIAM Journal on Numerical Analysis</i> , 1973, 10, 460-469.	2.3	73
16	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.	2.7	72
17	Data assimilation with correlated observation errors: experiments with a 1-D shallow water model. <i>Tellus, Series A: Dynamic Meteorology and Oceanography</i> , 2022, 65, 19546.	1.7	71
18	Estimating interchannel observation error correlations for IASI radiance data in the Met Office system. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2014, 140, 1236-1244.	2.7	63

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19	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.	1.4	61
20	Regularization of descriptor systems by output feedback. <i>IEEE Transactions on Automatic Control</i> , 1994, 39, 1742-1748.	5.7	60
21	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.	2.7	51
22	Numerical Methods for Stiff Two-Point Boundary Value Problems. <i>SIAM Journal on Numerical Analysis</i> , 1986, 23, 325-368.	2.3	50
23	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.	4.0	50
24	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.	2.7	49
25	Some necessary and sufficient conditions for eigenstructure assignment. <i>International Journal of Control</i> , 1985, 42, 1457-1468.	1.9	48
26	Optimal growth strategies when mortality and production rates are size-dependent. <i>Evolutionary Ecology</i> , 1993, 7, 576-592.	1.2	45
27	Minimum norm regularization of descriptor systems by mixed output feedback. <i>Linear Algebra and Its Applications</i> , 1999, 296, 39-77.	0.9	43
28	Smoothed histogram modification for image processing. <i>Computer Vision, Graphics, and Image Processing</i> , 1984, 26, 271-291.	1.0	40
29	Data assimilation for state and parameter estimation: application to morphodynamic modelling. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2013, 139, 314-327.	2.7	40
30	Conditioning and preconditioning of the variational data assimilation problem. <i>Computers and Fluids</i> , 2011, 46, 252-256.	2.5	39
31	Using Model Reduction Methods within Incremental Four-Dimensional Variational Data Assimilation. <i>Monthly Weather Review</i> , 2008, 136, 1511-1522.	1.4	32
32	Estimating correlated observation error statistics using an ensemble transform Kalman filter. <i>Tellus, Series A: Dynamic Meteorology and Oceanography</i> , 2022, 66, 23294.	1.7	30
33	Robustness in partial pole placement. <i>IEEE Transactions on Automatic Control</i> , 1987, 32, 728-732.	5.7	26
34	Generalized consistent ordering and the optimum successive over-relaxation factor. <i>Numerische Mathematik</i> , 1969, 13, 425-433.	1.9	25
35	Robust Pole Assignment in Descriptor Linear Systems via State Feedback. <i>European Journal of Control</i> , 2002, 8, 136-149.	2.6	23
36	Variational data assimilation for parameter estimation: application to a simple morphodynamic model. <i>Ocean Dynamics</i> , 2009, 59, 697-708.	2.2	23

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37	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
38	Regularization techniques for ill-posed inverse problems in data assimilation. Computers and Fluids, 2011, 46, 168-173.	2.5	22
39	On diagnosing observation error statistics with local ensemble data assimilation. Quarterly Journal of the Royal Meteorological Society, 2017, 143, 2677-2686.	2.7	22
40	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
41	Observation operators for assimilation of satellite observations in fluvial inundation forecasting. Hydrology and Earth System Sciences, 2019, 23, 2541-2559.	4.9	21
42	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
43	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
44	Robust pole assignment in systems subject to structured perturbations. Systems and Control Letters, 1990, 15, 373-380.	2.3	20
45	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
46	Estimating Forecast Error Covariances for Strongly Coupled Atmosphere-Ocean 4D-Var Data Assimilation. Monthly Weather Review, 2017, 145, 4011-4035.	1.4	20
47	Observation impact, domain length and parameter estimation in data assimilation for flood forecasting. Environmental Modelling and Software, 2018, 104, 199-214.	4.5	20
48	Reducing transatlantic flight emissions by fuel-optimised routing. Environmental Research Letters, 2021, 16, 025002.	5.2	19
49	Inner-Loop Stopping Criteria for Incremental Four-Dimensional Variational Data Assimilation. Monthly Weather Review, 2006, 134, 3425-3435.	1.4	18
50	A hybrid data assimilation scheme for model parameter estimation: Application to morphodynamic modelling. Computers and Fluids, 2011, 46, 436-441.	2.5	18
51	The conditioning of least-squares problems in variational data assimilation. Numerical Linear Algebra With Applications, 2018, 25, e2165.	1.6	18
52	Treating Sample Covariances for Use in Strongly Coupled Atmosphere-Ocean Data Assimilation. Geophysical Research Letters, 2018, 45, 445-454.	4.0	18
53	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
54	A new multivariable benchmark for Last Glacial Maximum climate simulations. Climate of the Past, 2020, 16, 699-712.	3.4	17

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55	<i>ℓ</i> ₁ regularisation for ill-posed problems in variational data assimilation. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2010, 10, 665-668.	0.2	15
56	Correlations of control variables in variational data assimilation. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2011, 137, 620-630.	2.7	13
57	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.	4.0	13
58	Improving the condition number of estimated covariance matrices. <i>Tellus, Series A: Dynamic Meteorology and Oceanography</i> , 2022, 72, 1696646.	1.7	13
59	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.	3.0	12
60	Bifurcation Analysis of Eigenstructure Assignment Control in a Simple Nonlinear Aircraft Model. <i>Journal of Guidance, Control, and Dynamics</i> , 1998, 21, 792-798.	2.8	11
61	A Singular Vector Perspective of 4DVAR: The Spatial Structure and Evolution of Baroclinic Weather Systems. <i>Monthly Weather Review</i> , 2006, 134, 3436-3455.	1.4	11
62	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.	1.3	10
63	On computational algorithms for pole assignment. <i>IEEE Transactions on Automatic Control</i> , 1986, 31, 643-645.	5.7	10
64	Modelling of forecast errors in geophysical fluid flows. <i>International Journal for Numerical Methods in Fluids</i> , 2008, 56, 1147-1153.	1.6	10
65	Technical note: Assessment of observation quality for data assimilation in flood models. <i>Hydrology and Earth System Sciences</i> , 2018, 22, 3983-3992.	4.9	10
66	State estimation using model order reduction for unstable systems. <i>Computers and Fluids</i> , 2011, 46, 155-160.	2.5	9
67	Data assimilation for moving mesh methods with an application to ice sheet modelling. <i>Nonlinear Processes in Geophysics</i> , 2017, 24, 515-534.	1.3	9
68	The impact of using reconditioned correlated observation error covariance matrices in the Met Office 1DVar system. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2020, 146, 1372-1390.	2.7	8
69	Weak constraints in four-dimensional variational data assimilation. <i>Meteorologische Zeitschrift</i> , 2007, 16, 767-776.	1.0	7
70	Decadal climate prediction with a refined anomaly initialisation approach. <i>Climate Dynamics</i> , 2017, 48, 1841-1853.	3.8	7
71	Smooth Regrading of Discretized Data. <i>SIAM Journal on Scientific and Statistical Computing</i> , 1982, 3, 145-159.	1.5	4
72	The role of cross-domain error correlations in strongly coupled 4DVar atmosphere-ocean data assimilation. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2020, 146, 2450-2465.	2.7	4

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73	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
74	Output Feedback in Descriptor Systems. The IMA Volumes in Mathematics and Its Applications, 1994, , 43-53.	0.5	3
75	The role of airspeed variability in fixed-time, fuel-optimal aircraft trajectory planning. Optimization and Engineering, 0, , .	2.4	3
76	Numerical solution of an elastic boundary layer problem using a multiple shooting technique. Journal of Computational Physics, 1982, 46, 369-389.	3.8	2
77	Regularization of Descriptor Systems. , 2015, , 415-433.		2
78	Application of Data Assimilation to Ocean and Climate Prediction. , 2016, , 3-10.		0
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