

Siegfried M Rump

List of Publications by Year in descending order

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34
papers

1,696
citations

777949

13
h-index

536525

29
g-index

35
all docs

35
docs citations

35
times ranked

800
citing authors

#	ARTICLE	IF	CITATIONS
1	Verified inclusions for a nearest matrix of specified rank deficiency via a generalization of Wedin's ϵ -theorem. BIT Numerical Mathematics, 2021, 61, 361-380.	1.0	2
2	Verified bounds for the determinant of real or complex point or interval matrices. Journal of Computational and Applied Mathematics, 2020, 372, 112610.	1.1	1
3	Rigorous Lower Bounds for the Ground State Energy of Molecules by Employing Necessary N-Representability Conditions. Journal of Chemical Theory and Computation, 2020, 16, 7342-7356.	2.3	0
4	Faithfully Rounded Floating-point Computations. ACM Transactions on Mathematical Software, 2020, 46, 1-20.	1.6	8
5	Lower Bounds for the Smallest Singular Value of Certain Toeplitz-like Triangular Matrices with Linearly Increasing Diagonal Entries. Integral Equations and Operator Theory, 2019, 91, 1.	0.4	1
6	Complex Disk Products and Cartesian Ovals. Journal of Geometry, 2019, 110, 1.	0.1	0
7	Error Bounds for Computer Arithmetics. , 2019, , .		2
8	Bounds for the determinant by Gershgorin circles. Linear Algebra and Its Applications, 2019, 563, 215-219.	0.4	3
9	Mathematically rigorous global optimization in floating-point arithmetic. Optimization Methods and Software, 2018, 33, 771-798.	1.6	2
10	Sharp estimates for perturbation errors in summations. Mathematics of Computation, 2018, 88, 349-368.	1.1	10
11	Estimates of the determinant of a perturbed identity matrix. Linear Algebra and Its Applications, 2018, 558, 101-107.	0.4	4
12	Error estimates for the summation of real numbers with application to floating-point summation. BIT Numerical Mathematics, 2017, 57, 927-941.	1.0	11
13	Interval arithmetic with fixed rounding mode. Nonlinear Theory and Its Applications IEICE, 2016, 7, 362-373.	0.4	3
14	On the definition of unit roundoff. BIT Numerical Mathematics, 2016, 56, 309-317.	1.0	6
15	Improved error bounds for floating-point products and Horner's scheme. BIT Numerical Mathematics, 2016, 56, 293-307.	1.0	7
16	Computable backward error bounds for basic algorithms in linear algebra. Nonlinear Theory and Its Applications IEICE, 2015, 6, 360-363.	0.4	2
17	Implementation and improvements of affine arithmetic. Nonlinear Theory and Its Applications IEICE, 2015, 6, 341-359.	0.4	28
18	Improved componentwise verified error bounds for least squares problems and underdetermined linear systems. Numerical Algorithms, 2014, 66, 309-322.	1.1	8

#	ARTICLE	IF	CITATIONS
19	Improved Backward Error Bounds for LU and Cholesky Factorizations. SIAM Journal on Matrix Analysis and Applications, 2014, 35, 684-698.	0.7	16
20	Improved Error Bounds for Inner Products in Floating-Point Arithmetic. SIAM Journal on Matrix Analysis and Applications, 2013, 34, 338-344.	0.7	39
21	Verified Bounds for Least Squares Problems and Underdetermined Linear Systems. SIAM Journal on Matrix Analysis and Applications, 2012, 33, 130-148.	0.7	16
22	Error estimation of floating-point summation and dot product. BIT Numerical Mathematics, 2012, 52, 201-220.	1.0	34
23	Error-free transformations of matrix multiplication by using fast routines of matrix multiplication and its applications. Numerical Algorithms, 2012, 59, 95-118.	1.1	34
24	Verified bounds for singular values, in particular for the spectral norm of a matrix and its inverse. BIT Numerical Mathematics, 2011, 51, 367-384.	1.0	37
25	Verified computation of a disc containing exactly $\lfloor k \rfloor$ roots of a univariate nonlinear function. Nonlinear Theory and Its Applications IEICE, 2010, 1, 89-96.	0.4	0
26	Verified error bounds for multiple roots of systems of nonlinear equations. Numerical Algorithms, 2010, 54, 359-377.	1.1	32
27	Verification methods: Rigorous results using floating-point arithmetic. Acta Numerica, 2010, 19, 287-449.	6.3	214
28	Accurate Floating-Point Summation Part I: Faithful Rounding. SIAM Journal of Scientific Computing, 2008, 31, 189-224.	1.3	147
29	Accurate Sum and Dot Product. SIAM Journal of Scientific Computing, 2005, 26, 1955-1988.	1.3	264
30	Rigorous and Portable Standard Functions. BIT Numerical Mathematics, 2001, 41, 540-562.	1.0	6
31	INTLAB – INTerval LABoratory. , 1999, , 77-104.		645
32	Fast and Parallel Interval Arithmetic. BIT Numerical Mathematics, 1999, 39, 534-554.	1.0	95
33	Validated Solution of Large Linear Systems. Computing Supplementum, 1993, , 191-212.	0.1	18
34	When does $f(A) = f(A^{-1})$ hold true?. Linear and Multilinear Algebra, 0, , 1-14.	0.5	0