Josef Dick

List of Publications by Year
in descending order

109 papers	2,593 citations	279487 23 h-index	264894 42 g-index
112 all docs	112 docs citations	112 times ranked	658 citing authors

#	Article	IF	Citations
1	High-dimensional integration: The quasi-Monte Carlo way. Acta Numerica, 2013, 22, 133-288.	6.3	404
2	Walsh Spaces Containing Smooth Functions and Quasiâ€“Monte Carlo Rules of Arbitrary High Order. SIAM Journal on Numerical Analysis, 2008, 46, 1519-1553.	1.1	99
3	Good Lattice Rules in Weighted Korobov Spaces with General Weights. Numerische Mathematik, 2006, 103, 63-97.	0.9	85
4	Multivariate integration in weighted Hilbert spaces based on Walsh functions and weighted Sobolev spaces. Journal of Complexity, 2005, 21, 149-195.	0.7	74
5	Higher Order QMC Petrov--Galerkin Discretization for Affine Parametric Operator Equations with Random Field Inputs. SIAM Journal on Numerical Analysis, 2014, 52, 2676-2702.	1.1	70
6	Liberating the weights. Journal of Complexity, 2004, 20, 593-623.	0.7	68
7	On the convergence rate of the component-by-component construction of good lattice rules. Journal of Complexity, 2004, 20, 493-522.	0.7	59
8	Explicit Constructions of Quasi-Monte Carlo Rules for the Numerical Integration of High-Dimensional Periodic Functions. SIAM Journal on Numerical Analysis, 2007, 45, 2141-2176.	1.1	53
9	Construction algorithms for polynomial lattice rules for multivariate integration. Mathematics of Computation, 2005, 74, 1895-1922.	1.1	52
10	Lattice rules for nonperiodic smooth integrands. Numerische Mathematik, 2014, 126, 259-291.	0.9	43
11	The construction of good extensible rank-1 lattices. Mathematics of Computation, 2008, 77, 2345-2373.	1.1	39
12	Exponential convergence and tractability of multivariate integration for Korobov spaces. Mathematics of Computation, 2011, 80, 905-905.	1.1	39
13	Approximation of analytic functions in Korobov spaces. Journal of Complexity, 2014, 30, 2-28.	0.7	38
14	Efficient calculation of the worst-case error and (fast) component-by-component construction of higher order polynomial lattice rules. Numerical Algorithms, 2012, 59, 403-431.	1.1	36
15	Multilevel Higher Order QMC Petrov--Galerkin Discretization for Affine Parametric Operator Equations. SIAM Journal on Numerical Analysis, 2016, 54, 2541-2568.	1.1	35
16	Multilevel higher-order quasi-Monte Carlo Bayesian estimation. Mathematical Models and Methods in Applied Sciences, 2017, 27, 953-995.	1.7	34
17	Construction of Interlaced Scrambled Polynomial Lattice Rules of Arbitrary High Order. Foundations of Computational Mathematics, 2015, 15, 1245-1278.	1.5	32
18	Higher Order Quasi--Monte Carlo Integration for Holomorphic, Parametric Operator Equations. SIAM-ASA Journal on Uncertainty Quantification, 2016, 4, 48-79.	1.1	31

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19	Strong tractability of multivariate integration of arbitrary high order using digitally shifted polynomial lattice rules. Journal of Complexity, 2007, 23, 436-453.	0.7	30
20	THE DECAY OF THE WALSH COEFFICIENTS OF SMOOTH FUNCTIONS. Bulletin of the Australian Mathematical Society, 2009, 80, 430-453.	0.3	30
21	Functions of bounded variation, signed measures, and a general Koksmaâ€“Hlawka inequality. Acta Arithmetica, 2015, 167, 143-171.	0.2	30
22	A simple proof of Stolarskyâ€™s invariance principle. Proceedings of the American Mathematical Society, 2013, 141, 2085-2096.	0.4	27
23	On the mean square weighted L2discrepancy of randomized digital (t,m,s)-nets over Z2. Acta Arithmetica, 2005, 117, 371-403.	0.2	25
24	Higher order scrambled digital nets achieve the optimal rate of the root mean square error for smooth integrands. Annals of Statistics, 2011, 39, .	1.4	24
25	Construction Algorithms for Digital Nets with Low Weighted Star Discrepancy. SIAM Journal on Numerical Analysis, 2005, 43, 76-95.	1.1	23
26	QMC Rules of Arbitrary High Order: Reproducing Kernel Hilbert Space Approach. Constructive Approximation, 2009, 30, 495-527.	1.8	23
27	Optimal L₂discrepancy bounds for higher order digital sequences over the finite field F₂. Acta Arithmetica, 2014, 162, 65-99.	0.2	23
28	Cyclic Digital Nets, Hyperplane Nets, and Multivariate Integration in Sobolev Spaces. SIAM Journal on Numerical Analysis, 2006, 44, 385-411.	1.1	22
29	Construction algorithms for higher order polynomial lattice rules. Journal of Complexity, 2011, 27, 281-299.	0.7	21
30	Point Sets on the Sphere $mathbb{S}^{2}$ with Small Spherical Cap Discrepancy. Discrete and Computational Geometry, 2012, 48, 990.	0.4	21
31	Covering of spheres by spherical caps and worst-case error for equal weight cubature in Sobolev spaces. Journal of Mathematical Analysis and Applications, 2015, 431, 782-811.	0.5	21
32	Discrepancy Theory and Quasi-Monte Carlo Integration. Lecture Notes in Mathematics, 2014, , 539-619.	0.1	20
33	Optimal randomized changing dimension algorithms for infinite-dimensional integration on function spaces with ANOVA-type decomposition. Journal of Approximation Theory, 2014, 184, 111-145.	0.5	19
34	Infinite-Dimensional Integration in Weighted Hilbert Spaces: Anchored Decompositions, Optimal Deterministic Algorithms, and Higher-Order Convergence. Foundations of Computational Mathematics, 2014, 14, 1027-1077.	1.5	18
35	On Korobov Lattice Rules in Weighted Spaces. SIAM Journal on Numerical Analysis, 2004, 42, 1760-1779.	1.1	17
36	Lattice-NystrÃ¶m method for Fredholm integral equations of the second kind with convolution type kernels. Journal of Complexity, 2007, 23, 752-772.	0.7	17

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37	On Quasi-Monte Carlo Rules Achieving Higher Order Convergence. , 2009, , 73-96.		17
38	On the exact <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" display="inline" overflow="scroll"><mml:mi>t</mml:mi></mml:math>-value of Niederreiter and Sobolâ€™ sequences. Journal of Complexity, 2008, 24, 572-581.	0.7	16
39	A Characterization of Sobolev Spaces on the Sphere and an Extension of Stolarskyâ€™s Invariance Principle to Arbitrary Smoothness. Constructive Approximation, 2013, 38, 397-445.	1.8	16
40	Duality theory and propagation rules for generalized digital nets. Mathematics of Computation, 2009, 79, 993-1017.	1.1	15
41	Quasiâ€"Monte Carlo rules for numerical integration over the unit sphere $${mathbb{S}^2}$$. Numerische Mathematik, 2012, 121, 473-502.	0.9	15
42	On the Optimal Order of Integration in Hermite Spaces with Finite Smoothness. SIAM Journal on Numerical Analysis, 2018, 56, 684-707.	1.1	15
43	Higher order Sobol' indices. Information and Inference, 2014, 3, 59-81.	0.9	14
44	Discrepancy bounds for infinite-dimensional order two digital sequences over <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:msub><mml:mrow><mml:mi mathvariant="double-struck">F</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:math>. Journal of Number Theory, 2014, 136, 204-232.	0.2	14
45	Proof techniques in quasi-Monte Carlo theory. Journal of Complexity, 2015, 31, 327-371.	0.7	14
46	Higher order Quasi-Monte Carlo integration for Bayesian PDE Inversion. Computers and Mathematics With Applications, 2019, 77, 144-172.	1.4	14
47	The tent transformation can improve the convergence rate of quasi-Monte Carlo algorithms using digital nets. Numerische Mathematik, 2006, 105, 413-455.	0.9	13
48	On the existence of higher order polynomial lattices based on a generalized figure of merit. Journal of Complexity, 2007, 23, 581-593.	0.7	13
49	The construction of extensible polynomial lattice rules with small weighted star discrepancy. Mathematics of Computation, 2007, 76, 2077-2086.	1.1	12
50	Explicit constructions of point sets and sequences with low discrepancy. , 2014, , 63-86.		12
51	Discrepancy bounds for deterministic acceptance-rejection samplers. Electronic Journal of Statistics, 2014, 8, .	0.4	12
52	Spatial low-discrepancy sequences, spherical cone discrepancy, and applications in financial modeling. Journal of Computational and Applied Mathematics, 2015, 286, 28-53.	1.1	12
53	A reduced fast component-by-component construction of lattice points for integration in weighted spaces with fast decreasing weights. Journal of Computational and Applied Mathematics, 2015, 276, 1-15.	1.1	12
54	A note on the existence of sequences with small star discrepancy. Journal of Complexity, 2007, 23, 649-652.	0.7	11

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55	The weighted star discrepancy of Korobovâ€™s p-sets. Proceedings of the American Mathematical Society, 2015, 143, 5043-5057.	0.4	11
56	Deep Learning Based Unsupervised and Semi-supervised Classification for Keratoconus. , 2020, , .		11
57	Equidistribution Properties of Generalized Nets and Sequences. , 2009, , 305-322.		11
58	Diaphony, discrepancy, spectral test and worst-case error. Mathematics and Computers in Simulation, 2005, 70, 159-171.	2.4	10
59	Constructions of general polynomial lattice rules based on the weighted star discrepancy. Finite Fields and Their Applications, 2007, 13, 1045-1070.	0.6	10
60	On the Fast Computation of the Weight Enumerator Polynomial and the t Value of Digital Nets over Finite Abelian Groups. SIAM Journal on Discrete Mathematics, 2013, 27, 1335-1359.	0.4	10
61	Low-discrepancy point sets for non-uniform measures. Acta Arithmetica, 2014, 163, 345-369.	0.2	10
62	Numerical integration of HÃ¶lder continuous, absolutely convergent Fourier, Fourier cosine, and Walsh series. Journal of Approximation Theory, 2014, 183, 14-30.	0.5	9
63	Fast QMC Matrix-Vector Multiplication. SIAM Journal of Scientific Computing, 2015, 37, A1436-A1450.	1.3	9
64	A construction of polynomial lattice rules with small gain coefficients. Numerische Mathematik, 2011, 119, 271-297.	0.9	8
65	Duality theory and propagation rules for higher order nets. Discrete Mathematics, 2011, 311, 362-386.	0.4	8
66	Stability of lattice rules and polynomial lattice rules constructed by the component-by-component algorithm. Journal of Computational and Applied Mathematics, 2021, 382, 113062.	1.1	8
67	A best possible upper bound on the star discrepancy of (t, m, 2)-nets. Monte Carlo Methods and Applications, 2006, 12, 1-17.	0.3	7
68	Star discrepancy estimates for digital (t, m, 2)-nets and digital (t, 2) -sequences over Z2. Acta Mathematica Hungarica, 2005, 109, 239-254.	0.3	6
69	On the mean square weighted <mml:math altimg="si1.gif" overflow="scroll" xmlns:xocs="http://www.elsevier.com/xml/xocs/dtd" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.elsevier.com/xml/ja/dtd" xmlns:ja="http://www.elsevier.com/xml/ja/dtd" xmlns:mml="http://www.w3.org/1998/Math/MathML" xmlns:tb="http://www.elsevier.com/xml/common/table/dtd" xmlns:sb="http://www.elsevier.com/xml/common/struct-bib/dtd" xmlns:ce="http://www.elsevier.com/x	0.7	6
70	Optimal L p -discrepancy bounds for second order digital sequences. Israel Journal of Mathematics, 2017, 221, 489-510.	0.4	6
71	Richardson Extrapolation of Polynomial Lattice Rules. SIAM Journal on Numerical Analysis, 2019, 57, 44-69.	1.1	6
72	Approximation of Functions Using Digital Nets. , 2008, , 275-297.		6

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73	Constructing Good Lattice Rules with Millions of Points. , 2004, , 181-197.		6
74	Dyadic Diaphony of Digital Nets Over â„2. Monatshefte Fur Mathematik, 2005, 145, 285-299.	0.5	5
75	Periodic functions with bounded remainder. Archiv Der Mathematik, 2006, 87, 554-563.	0.3	5
76	Discrepancy estimates for variance bounding Markov chain quasi-Monte Carlo. Electronic Journal of Probability, 2014, 19, .	0.5	5
77	Discrepancy bounds for uniformly ergodic Markov chain quasi-Monte Carlo. Annals of Applied Probability, 2016, 26, .	0.6	5
78	DISCREPANCY OF SECOND ORDER DIGITAL SEQUENCES IN FUNCTION SPACES WITH DOMINATING MIXED SMOOTHNESS. Mathematika, 2017, 63, 863-894.	0.3	5
79	A weighted discrepancy bound of quasi-Monte Carlo importance sampling. Statistics and Probability Letters, 2019, 149, 100-106.	0.4	5
80	Improved Efficiency of a Multi-Index FEM for Computational Uncertainty Quantification. SIAM Journal on Numerical Analysis, 2019, 57, 1744-1769.	1.1	5
81	A Taylor space for multivariate integration. Monte Carlo Methods and Applications, 2006, 12, .	0.3	4
82	The construction of good extensible Korobov rules. Computing (Vienna/New York), 2007, 79, 79-91.	3.2	4
83	Koksmaâ€"Hlawka type inequalities of fractional order. Annali Di Matematica Pura Ed Applicata, 2008, 187, 385-403.	0.5	4
84	Duality for digital sequences. Journal of Complexity, 2009, 25, 406-414.	0.7	4
85	On the approximation of smooth functions using generalized digital nets. Journal of Complexity, 2009, 25, 544-567.	0.7	4
86	Random weights, robust lattice rules and the geometry of the cbcrc algorithm. Numerische Mathematik, 2012, 122, 443-467.	0.9	4
87	On a projection-corrected component-by-component construction. Journal of Complexity, 2016, 32, 74-80.	0.7	4
88	Construction of interlaced polynomial lattice rules for infinitely differentiable functions. Numerische Mathematik, 2017, 137, 257-288.	0.9	4
89	Digital inversive vectors can achieve polynomial tractability for the weighted star discrepancy and for multivariate integration. Proceedings of the American Mathematical Society, 2017, 145, 3297-3310.	0.4	4
90	Randomized Smolyak algorithms based on digital sequences for multivariate integration. IMA Journal of Numerical Analysis, 2007, 27, 655-674.	1.5	3

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91	A note on the periodic $$L_2$$-discrepancy of Korobovâ€™s p-sets. Archiv Der Mathematik, 2020, 115, 67-78.	0.3	3
92	Toeplitz Monte Carlo. Statistics and Computing, 2021, 31, 1.	0.8	3
93	A multivariate fast discrete Walsh transform with an application to function interpolation. Mathematics of Computation, 2009, 78, 1573-1591.	1.1	2
94	Quasiâ€“Monte Carlo Numerical Integration on $mathbb{R}^s$: Digital Nets and Worst-Case Error. SIAM Journal on Numerical Analysis, 2011, 49, 1661-1691.	1.1	2
95	Lattice-based integration algorithms: Kronecker sequences and rank-1 lattices. Annali Di Matematica Pura Ed Applicata, 2018, 197, 109-126.	0.5	2
96	Tractability properties of the discrepancy in Orlicz norms. Journal of Complexity, 2020, 61, 101468.	0.7	2
97	Numerical integration in log-Korobov and log-cosine spaces. Numerical Algorithms, 2015, 70, 753-775.	1.1	1
98	A discrepancy bound for deterministic acceptance-rejection samplers beyond $$N^{-1/2}$$ in dimension 1. Statistics and Computing, 2017, 27, 901-911.	0.8	1
99	Weighted integration over a hyperrectangle based on digital nets and sequences. Journal of Computational and Applied Mathematics, 2021, 393, 113509.	1.1	1
100	A quasi-Monte Carlo data compression algorithm for machine learning. Journal of Complexity, 2021, 67, 101587.	0.7	1
101	Higher Order Quasi Monte-Carlo Integration in Uncertainty Quantification. Lecture Notes in Computational Science and Engineering, 2015, , 445-453.	0.1	1
102	The Inverse of the Star-Discrepancy Problem and the Generation of Pseudo-Random Numbers. Lecture Notes in Computer Science, 2014, , 173-184.	1.0	1
103	Strong tractability of multivariate integration of arbitrary order. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 1022405-1022406.	0.2	0
104	A higher order Blokhâ€“Zyablov propagation rule for higher order nets. Finite Fields and Their Applications, 2012, 18, 1169-1183.	0.6	0
105	Applications of geometric discrepancy in numerical analysis and statistics. , 0, , 39-57.		0
106	Discrepancy Estimates For Acceptance-Rejection Samplers Using Stratified Inputs. Springer Proceedings in Mathematics and Statistics, 2016, , 599-619.	0.1	0
107	Digital net properties of a polynomial analogue of Frolov's construction. Finite Fields and Their Applications, 2018, 51, 325-350.	0.6	0
108	A new regularization for sparse optimization. ANZIAM Journal, 0, 62, C176-C191.	0.0	0

#	Article	IF	Citations
109	Extrapolated Polynomial Lattice Rule Integration in Computational Uncertainty Quantification. SIAM-ASA Journal on Uncertainty Quantification, 2022, 10, 651-686.	1.1	0