

PUBLICATIONS

Books/Chapters:

1. *Information, Uncertainty, Complexity*, with J.F. Traub and H. Woźniakowski, Addison-Wesley, Reading, Ma., 1983. *Russian* translation by MIR, Moscow, 1988.
2. *Information-Based Complexity*, with J.F. Traub and H. Woźniakowski Academic Press, New York, NY, 1988.
3. *Information-Based Complexity Workshop*, Proceedings of a workshop held in Minneapolis, MN, August 5–14, 2002. Edited by E. Novak, G. W. Wasilkowski and H. Woźniakowski. *J. of Complexity* **19** (2003), no. 6.
4. *Festschrift for the 60th Birthday of Henryk Woźniakowski*. Edited by Z. Kacewicz, L. Plaskota, and G.W. Wasilkowski. *J. of Complexity* 2007.
5. “Spline algorithms for linear problems,” Chapter 4 in *A General Theory of Optimal Algorithms*, by J.F. Traub and H. Woźniakowski, Academic Press, 1980.

Papers:

6. “Can any stationary iteration using linear information be globally convergent?” *J. of ACM* **27** (1980) 263-269.
7. “n-evaluation conjecture for multipoint iterations for the solution of scalar nonlinear equations,” *J. of ACM* **28** (1981), 71-80.
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9. “Any iteration for polynomial equations using linear information has infinite complexity,” *Theoretical Computer Science* **22** (1983), 195-208.
10. “Inverse function problem,” *J. of Inf. Processing and Cybernetics*, **19** (1983), 491-496.
11. “Some nonlinear problems are as easy as the approximation problem,” *Computers and Mathematics with Applications* **10** (1984), 351-363.
12. “Average case optimality for linear problems,” with J.F. Traub and H. Woźniakowski, with J.F. Traub and H. Woźniakowski, *Theoretical Computer Science* **29** (1984), 1-25.
13. “Can adaption help on the average?” with H. Woźniakowski, *Numerische Mathematik* **44** (1984), 169-190.
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15. "Optimal algorithms for linear problems with Gaussian measures," *Rocky Mt. J. of Math.* **16** (1986), 727-749.
16. "Approximation of linear functionals on Banach spaces with a Gaussian measure," with D. Lee, *J. of Complexity* **2** (1986), 12-43.
17. "Average case optimal algorithms in Hilbert spaces," with H. Woźniakowski, *J. of Approximation Theory* **47** (1986), 17-25.
18. "Information of varying cardinality," *J. of Complexity* **2** (1986), 204-228.
19. "Average condition number for solving linear equations," with M. Shub, N. Weiss and H. Woźniakowski, *Linear Algebra and its Applications* **83** (1986), 79-102.
20. "How powerful is continuous nonlinear information for linear problems?" with B. Kacwicz, *J. of Complexity* **2** (1986), 306-316.
21. "A note on the trade-off between sampling and quantization in signal processing," with D. Lee and T. Pavlidis, *J. of Complexity* **3** (1987), 359-371.
22. "On optimal algorithms in an asymptotic model with Gaussian measure," with H. Woźniakowski, *SIAM J. Math. Anal.* **19** (1988), 632-647.
23. "On adaption with noisy information," with J.B. Kadane and H. Woźniakowski, *J. of Complexity* **4** (1988), 257-276.
24. "Maximum likelihood estimators and worst case optimal algorithms for system identification," with R. Tempo, *Systems & Control Letters* **10** (1988), 265-270.
25. "A clock synchronization problem with random delays," *J. of Complexity*, **5** (1989), 1-11.
26. "Randomization for continuous problems," *J. of Complexity* **5** (1989), 195-218.
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28. "Mixed settings for linear problems," with H. Woźniakowski, *J. of Complexity* **5** (1989), 457-465.
29. "On average complexity of multivariate problems," with A. Papageorgiou, *J. of Complexity* **6** (1990), 1-23.
30. "On piecewise-polynomial approximation for functions with a fractional derivative bounded in L_p -norm," *J. of Approximation Theory* **62** (1990), 372-380.
31. "Note on quantization for signals with bounded $(r + 1)$ st derivative," *J. of Complexity* **6** (1990), 278-289.

32. “On the power of adaptive information for functions with singularities,” with F. Gao, *Mathematics of Computation* **58** (1992), 285-304.
33. “On average complexity of global optimization problems,” *Mathematical Programming* **57** (1992), 313-324.
34. “On a posteriori upper bounds for approximating linear functionals in probabilistic setting,” *J. Complexity* **8** (1992), 424-433.
35. “Discontinuity detection and thresholding – a stochastic approach,” with D. Lee, *J. Complexity* **9** (1993), 76-96.
36. “A new zero-crossing-based edge detector,” with D. Lee and R. Mehrotra, *IEEE Trans. on Image Processing* **2**, (1993), 265-268.
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38. “Integration and approximation of multivariate functions: Average case complexity with isotropic Wiener measure,” *Bulletin of the American Mathematical Society* **28** (1993), 308-314.
39. “On multivariate integration of stochastic processes,” with K. Ritter and H. Woźniakowski, *International Series of Numerical Mathematics* **112** (1993), 331-347.
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48. “On tractability of path integration,” with H. Woźniakowski, *J. of Mathematical Physics* **37** (4) (1996), 2071-2088.
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58. “A new algorithm and worst case complexity for Feynman-Kac path integration,” with L. Plaskota and H. Woźniakowski, *J. of Computational Physics* **164** (2000), 335-353.
59. “The inverse of the star-discrepancy depends linearly on the dimension,” with S. Heinrich, E. Novak, and H. Woźniakowski, *Acta Arithmetica* **XCVI.3** (2001), 279-302.
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61. “The exact exponent of sparse grid quadratures in the weighted case,” with L. Plaskota, *J. of Complexity* **17** (2001), 840-849.
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65. “A Monte Carlo algorithm for weighted integration over \mathbf{R}^d ,” with P. Gajda, Y. Li, and L. Plaskota, *Mathematics of Computation* **73** (2004), 813-825.
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69. “On strong tractability of weighted multivariate integration,” with F. J. Hickernell and I. H. Sloan, *Mathematics of Computation* **73** (2004), 1903-1911.
70. “Smolyak’s algorithm for integration and L_1 -approximation of multivariate functions with bounded mixed derivatives of second order,” with L. Plaskota, *Numerical Algorithms*, **36** (2004), 229-246.
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80. “Uniform approximation of piecewise r -smooth and globally continuous functions,” with L. Plaskota, *SIAM J. Numerical Analysis* **47** (2009), 762-785.
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83. “New averaging technique for approximating weighted integrals,” with L. Plaskota and Y. Zhao, *J. Complexity* **25** (2009), 268-291.
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85. “On the power of standard information for L_∞ approximation in the randomized setting,” with F. Y. Kuo and H. Woźniakowski, *BIT Numer. Math.* **158** (2009), 543-564.
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99. “Efficient algorithms for multivariate and ∞ -variate integration with exponential weight,” with L. Plaskota, *Numerical Algorithms*, posted (2013). DOI: 10.1007/S11075-013-9798-4
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Refereed Conference Publications

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112. “Computing optical flow,” with D. Lee and A. Papageorgiou, *Proceedings of IEEE Computer Society Workshop on Visual Motion*, March 1989.
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122. “Liberating the dimension for function approximation and integration,” *Monte Carlo and Quasi-Monte Carlo Methods 2010* (L. Plaskota and H. Woźniakowski, eds.), pp. 211-231, Springer Proceedings in Math. and Stat., Springer-Verlag, Berlin, 2012.
DOI: 10.1007/978-3-642-27440-4-9.
123. “Truncation dimension for approximation,” with P. Kritzer and F. Pillichshammer, *Contemporary Computational Mathematics - celebration of the 80th birthday of Ian Sloan* (J. Dick, F. Y. Kuo, and H. Woźniakowski, eds.), Springer-Verlag, 2018, accepted.

Papers Submitted for Publication:

124. “Truncation in average and worst case settings for special classes of ∞ -variate functions,” with P. Kritzer, and F. Pillichshammer.

125. "Efficient implementations of the Multivariate Decomposition Method for approximating infinite-variate integrals," with A. Gilbert, F. Y. Kuo, and D. Nuyens.