List of Publications

1. P. Junghanns, S. Meyer, Eine asymptotische Zerlegung der Lösung einer schwach nichtlinearen Randwertaufgabe vierter Ordnung mit einem kleinen Parameter bei der höchsten Ableitung, Wiss. Z. d. THK, Heft 5, 1979, 597-606.

2. P. Junghanns, Kollokationsverfahren zur näherungsweisen Lösung singulärer Integralgleichungen mit unstetigen Koeffizienten, Math. Nachr., 102 (1981), 17-24.

3. P. Junghanns, B. Silbermann, Zur Theorie der Näherungsverfahren für singuläre Integralgleichungen auf Intervallen, Math. Nachr., 103 (1981), 199-244.

4. P. Junghanns, Kollokations- und Quadraturformelverfahren zur näherungsweisen Lösung einer Klasse singulärer Integralgleichungen mit einer festen Singularität, Wiss. Z. d. THK, Heft 3, 1982, 295-303.

5. P. Junghanns, B. Silbermann, Lokale Theorie des Kollokationsverfahrens zur näherungsweisen Lösung singulärer Integralgleichungen, Preprint, AdW der DDR, Institut für Mathematik, P-Math-10/82, Berlin 1982.

6. P. Junghanns, B. Silbermann, Numerical analysis for one-dimensional Cauchy-type singular integral equations, in: Probleme und Methoden der Mathematischen Physik, Teubner-Texte, 1983, 122-129.

7. P. Junghanns, B. Silbermann, Local theory of the collocation method for the approximate solution of singular integral equations, Integral Equations and Operator Theory, 7 (1984), 791-807.

8. P. Junghanns, Uniform Convergence of approximate methods for Cauchy-type singular integral equations over (-1,1), Wiss. Z. d. THK, Heft 2, 1984, 251-256.

9. P. Junghanns, Some remarks on the zero distribution of pairs of polynomials associated with singular integral operators. A convergence theorem for the quadrature method, Wiss. Z. d. THK, Heft 1, 1985, 88-93.

10. P. Junghanns, Effective solution of systems of algebraic equations occuring in the approximate solution of singular integral equations by means of the method of quadrature formulae, Wiss. Z. d. THK, Heft 1, 1985, 94-96.

11. P. Junghanns, B. Silbermann, The numerical treatment of singular integral equations by means of polynomial approximations, Preprint, AdW der DDR, Karl-Weierstraß-Institut fr Mathematik, P-Math-35/86, Berlin 1986.

12. D. Berthold, P. Junghanns, Direct multiple grid methods for solving singular integral equations, Wiss. Z. d. TUK, Heft 2, 1987, 180-186.

13. P. Junghanns, B. Silbermann, Numerical analysis of the quadrature method for solving linear and nonlinear singular integral equations, Wiss. Schriftenreihe d. TUK, 10/1988.

14. P. Junghanns, A new convergence rate for the quadrature method for solving singular integral equations, Banach Centre Publications, 22 (1989), 183-191.

15. P. Junghanns, D. Oestreich, Numerische Lösung des Staudammproblems mit Drainage, ZAMM, 69 (1989), 83-92.

16. P. Junghanns, B. Silbermann, Free boundary value problems and nonlinear singular integral equations, Second World Congress on Comp. Mech., Ext. Abstracts of Lectures, Stuttgart 1990, 425-428.

17. P. Junghanns, B. Silbermann, Automatic computer programs for the solution of Cauchy-type singular integral equations, Second World Congress on Comp. Mech., Ext. Abstracts of Posters, Stuttgart 1990, 455-458.

18. P. Junghanns, D. Oestreich, Application of nonlinear singular integral equations to the numerical solution of a symmetric electrochemical machining problem, Computers & Structures, 44 (1992) No. 1/2, pp. 409-417.

19. D. Berthold, P. Junghanns, New error bounds for the quadrature method for the solution of Cauchy singular integral equations, SIAM J. Numer. Anal., 30 (5) (1993), 1351-1372.

20. P. Junghanns, U. Weber, On the solvability of nonlinear singular integral equations, ZAA, 12 (1993), 683-698.

21. P. Junghanns, Product integration for the generalized airfoil equation, in: Beiträge zur Angewandten Analysis und Informatik (Hrsg. E. Schock), Shaker Verlag, Aachen, 1994, 171-188.

22. P. Junghanns, Numerical analysis of Newton projection methods for nonlinear singular integral equations, J. Comp. Appl. Math., 55 (1994), 145-163.

23. P. Junghanns, S. Roch, U. Weber, Finite sections for singular integral operators by weighted Chebyshev polynomials, Integral Equ. Oper. Theory, 21 (1995), 319-333.

24. E. Hennebach, P. Junghanns, G. Vainikko, Weakly singular integral equations with operator-valued kernels and an application to radiation transfer problems, Integral Equ. Oper. Theory, 22 (1995), 37-64.

25. P. Junghanns, Numerical solution of a free surface seepage problem from nonlinear channel, Applicable Analysis, 63 (1996), 87-110.

26. P. Junghanns, On the numerical solution of nonlinear singular integral equations, ZAMM, 76(S2) (1996), 157-160.

27. M. R. Capobianco, P. Junghanns, U. Luther, G. Mastroianni, Weighted uniform convergence of the quadrature method for Cauchy singular integral equations, in: Singular Integral Operators and Related Topics, ed. by A. Böttcher and I. Gohberg, Operator Theory Advances and Applications, Vol. 90, Birkhäuser Verlag, 1996, pp. 153-181.

28. M. R. Capobianco, G. Criscuolo, P. Junghanns, A fast algorithm for Prandtl's integro-differential equation, J. Comp. Appl. Math., 77 (1997), 103-128.

29. P. Verlinden, P. Junghanns, Discretization of a weakly singular integral equation by variable transformation and sinc-interpolation, Preprint, TU Chemnitz-Zwickau, 1996.

30. P. Junghanns, Jacobi polynomials, singular integral operators, and approximation methods, School on Computational Mathematics, Vico Equense, September 1996.

31. P. Junghanns, U. Luther, Cauchy singular integral equations in spaces of continuous functions and methods for their numerical solution, J. Comp. Appl. Math., 77 (1997), 201-237.

32. P. Junghanns, U. Weber, Banach algebra techniques for Cauchy singular integral equations on an interval, in: Boundary Element Technology XII, ed.s J.I. Frankel, C.A. Brebbia, and M.A.H. Aliabadi, Computational Mechanics Publications, Southampton, Boston, 1997, pp. 419-428.

33. P. Junghanns, U. Weber, Local theory of a collocation method for Cauchy singular integral equations on an interval, Preprint 97-10, TU Chemnitz-Zwickau, 1997.

34. P. Junghanns, A. Matveev, O postroenii priblischennowo rescheniya odnowo nelinejnowo integral'nowo yravneniya pronizajemowo profilya, Differential'nye Uravneneniya, 33, no. 9 (1997), 1242-1252 (English translation in: Differential Equations, 33 (1997)).

35. P. Verlinden, P. Junghanns, Corrected trapezoidal rules for $\int_{-\infty}^{+\infty} |x|^{\alpha} g(x)\, dx$, in: Numerical Mathematics, ed. A. Sydow, 15th IMACS World Congress on Scientific Computation, Modelling and Applied Mathematics, Berlin, 1997, pp. 481-485.

36. P. Junghanns, U. Luther, Uniform convergence of the quadrature method for Cauchy singular integral equations with weakly singular perturbation kernels, Rendiconti del Circolo Matematico di Palermo, Serie II, Vol. 52, 1998, 551-566 (Proc. of 3rd International Conference on Functional Analysis and Approximation Theory, Acquafredda di Maratea, September 1996).

37. P. Junghanns, U. Luther, Uniform convergence of a fast algorithm for Cauchy singular integral equations, Linear Algebra Appl., 275-276 (1998), 327-347.

38. P. Junghanns, U. Weber, Local theory of projection methods for Cauchy singular integral equations on an interval, in: Boundary Integral Methods: Numerical and Mathematical Aspects, ed. M. A. Golberg, Computational Mechanics Publications, Series: Computational Engineering, Southampton, Boston, 1998, pp. 217-256 (Preprint 97-25, Fakultät für Mathematik, TU Chemnitz, 1997).

39. M. R. Capobianco, G. Criscuolo, P. Junghanns, U. Luther, Uniform convergence of the collocation method for Prandtl's integro-differential equation, ANZIAM J., 42 (2000), 151-168.

40. P. Junghanns, K. Müller, A collocation method for nonlinear Cauchy singular integral equations, J. Comp. Appl. Math., 115 (2000), 283-300.

41. P. Junghanns, G. Mastroianni, On the stability of collocation methods for Cauchy singular integral equations on an interval, Operator Theory: Advances and Applications, Birkhäuser Verlag, Vol. 121 (2001), pp. 261-277.

42. P. Junghanns, B. Silbermann, Numerical analysis for one-dimensional Cauchy singular integral equations, J. Comp. Appl. Math., 125 (2000), pp. 395-421.

43. P. Junghanns, S. Roch, B. Silbermann, Collocation methods for systems of Cauchy singular integral equations on an interval, Comp. Technologies, 6 (2001), pp. 88-124.

44. P. Junghanns, G. Semmler, U. Weber, E. Wegert, Nonlinear singular integral equations on a finite interval, Math. Meth. Appl. Sci., 24 (2001), 1275-1288.

45. P. Junghanns, K. Müller, K. Rost, On collocation methods for nonlinear Cauchy singular integral equations, in: Toeplitz Matrices and Singular Integral Equations, Operator Theory: Advances and Applications, Birkhäuser Verlag, Vol. 135 (2002) (A. Böttcher, I. Gohberg, P. Junghanns eds.), pp. 209-233.

46. P. Junghanns, A. Rathsfeld, A polynomial collocation method for Cauchy singular integral equations over the interval, Electr. Trans. Numer. Anal., 14 (2002), 79-126.

47. P. Junghanns, A. Rathsfeld, On polynomial collocation for Cauchy singular Integral equations with fixed singularities, Integral Equat. Operator Theory, 43 (2002), 155-176.

48. P. Junghanns, A. Rogozhin, Collocation methods for singular integral equations on the interval, Electr. Trans. Numer. Anal., 17 (2004), 11-75.

49. P. Junghanns, Optimal control for a parametrized family of nonlinear Cauchy singular integral equations, J. Comp. Appl. Math., 164-165 (2004), 431-454.

50. P. Junghanns, K. Rost, Krylov subspace methods for Cauchy singular integral equations, Facta Universitatis (Niš), Ser. Math. Inform., 19 (2004), 93-108.

51. M. R. Capobianco, G. Criscuolo, P. Junghanns, On the numerical solution of a nonlinear integral equation of Prandtl's type, in: *Operator Theory: Advances and Applications*, Vol. 160, pp. 53-79, Birkhäuser Verlag, Basel, 2005.

52. P. Junghanns, K. Rost, Matrix representations associated to collocation methods for Cauchy singular integral equations, Math. Methods Appl. Sci., 30 (2007), 1811-1821.

53. M. R. Capobianco, G. Criscuolo, P. Junghanns, On the numerical solution of a hypersingular integral equation with fixed singularities, in: *Operator Theory: Advances and Applications*, Vol. 187, 95-116, Birkhäuser Verlag, 2009.

54. P. Junghanns, EAGLE-GUIDE Orthogonale Polynome, Edition am Gutenbergplatz, Leipzig, 2009.

55. P. Junghanns, G. Mastroianni, M. Seidel, On the stability of collocation methods for Cauchy singular integral equations in weighted $\mathbf{L}^p$ spaces, Math. Nachr., 283 (2010), 1-27.

56. P. Junghanns, G. Monegato, A. Strozzi, On the integral equation formulations of some 2D contact problems, J. Comp. Appl. Math., 234 (2010), 2808-2825. DOI: 10.1016/j.cam.2010.01.021

57. M. R. Capobianco, G. Criscuolo, P. Junghanns, Newton methods for a class of nonlinear hypersingular integral equations, Numerical Algorithms, 55 (2010), 205-221. DOI: 10.1007/s11075-010-9387-8

58. P. Junghanns, G. Monegato, On the numerical solution of integral equations with logarithmic kernels, Rediconti del Circolo Matematico di Palermo, Serie II, 82 (2010), 1-20.

59. P. Junghanns, L. v. Wolfersdorf, On the monotonicity of some singular integral operators, Math. Meth. Appl. Sciences, Math. Methods Appl. Sci., 35 (2012), 894-922.

60. P. Junghanns, R. Kaiser, Collocation for Cauchy singular integral equations, Linear Algebra Appl., 439 (2013), 729-770, http://dx.doi.org/10.1016/j.laa.2012.09.010

61. P. Junghanns, W. Themistoclakis, A. Vecchio, Fixed point iterations for a class of nonstandard Sturm-Liouville boundary value problems, Nonlinear Analysis, 94 (2014). 217-230, http://dx.doi.org/10.1016/j.na.2013.08.005

62. P. Junghanns, W. Themistoclakis, A. Vecchio, On the numerical solution of a class of nonstandard Sturm-Liouville boundary value problems, J. Comp. Appl. Math. (2013), http://dx.doi.org/10.1016/j.cam.2013.10.052

63. K. Flemming, P. Junghanns, A fast algorithm for the numerical solution of an integral equation with logarithmic kernel, Publications de l'Institut Mathématique, 96 (2014), 143-157.

64. P. Junghanns, R. Kaiser, G. Mastroianni, Collocation for singular integral equations with fixed singularities of particular Mellin type, Electr. Trans. Numer. Anal., 41 (2014), 190-248.

65. P. Junghanns, R. Kaiser, D. Potts, Collocation-quadrature methods and fast summation for Cauchy singular integral equations with fixed singularities, Linear Algebra Appl. 491 (2016), 187-238, http://dx.doi.org/10.1016/j.laa.2015.07.006

66. P. Junghanns, R. Kaiser, On a collocation-quadrature method for the singular integral equation of the notched half-plane problem, In: Large truncated Toeplitz matrices, Toeplitz operators, and related topics, Operator Theory: Advances and Applications, Volume 259, Birkhäuser, 2017. (Bini, Dario ; Ehrhardt, Torsten ; Karlovich, Alexei Yu. ; Spitkovsky, Ilya, eds.), pp. 413-462.

67. P. Junghanns, R. Kaiser, A numerical approach for a special crack problem, Dolomites Research Notes on Approximation, 10 (2017), Special Issue, 56-67.

68. L. Demasi, P. Junghanns, G. Monegato, Properties and numerical solution of some integral equations to minimize airplane drag, in: Contemporary Computational Mathematics - a celebration of the 80th birthday of Ian Sloan (J. Dick, F. Y. Kuo, H. Woźniakowski, eds.), Springer-Verlag, 2018, pp. 637-660.

69. P. Junghanns, G. Mastroianni, I. Notarangelo, On Nyström and product integration methods for Fredholm integral equations, in: Contemporary Computational Mathematics - a celebration of the 80th birthday of Ian Sloan (J. Dick, F. Y. Kuo, H. Woźniakowski, eds.), Springer-Verlag, 2018.

70. P. Junghanns, R. Kaiser, A note on the Fredholm theory of singular integral equations with Cauchy and Mellin kernels, in: Operator Theory: Advances and Applications (OTAA, "Operator Theory, Analysis and the State Space Approach") series dedicated to Rien Kaashoek, Vol. 271 (2018), pp. 291-325.

71. P. Junghanns, R. Kaiser, A note on Kalandiya's method for a crack problem, accepted for publication in Applied Numerical Methods