

Monographie:

- G. Heinig and K. Rost, *Algebraic methods for Toeplitz-like matrices and operators*, Birkhäuser, Basel, 1984; MR 86i:47034b
Akademie Verlag, Berlin, 1984; MR 86i:47034a

Erschienene Arbeiten in referierten Zeitschriften oder Büchern:

1. T. Ehrhardt and K. Rost, A direct proof of an inversion formula for Bezoutians, *Operator Theory: Advances and Appl.* **297** (2024), 69-81.
2. T. Ehrhardt and K. Rost, Inversion formulas for Toeplitz-plus-Hankel matrices, *Linear Algebra Appl.* **697** (2024), 420-442.
3. T. Ehrhardt and K. Rost, On Toeplitz-plus-Hankel matrices and Toeplitz-plus-Hankel-Bezoutians, *Operators and Matrices*, **16**, 3 (2022), 859-894.
4. T. Ehrhardt and K. Rost, Restricted inversion of split Bezoutians, *Operator Theory: Advances and Appl.*, **268** (2018), 207-246.
5. T. Ehrhardt and K. Rost, Fast inversion of centrosymmetric Toeplitz-plus-Hankel Bezoutians, *Operator Theory: Advances and Appl.*, **259** (2017), 267-300.
6. T. Ehrhardt and K. Rost, Inversion of centroskewsymmetric Toeplitz-plus-Hankel Bezoutians, *Electronic Journal of Linear Algebra*, **30** (2015), 336-359.
7. T. Ehrhardt and K. Rost, Inversion of centrosymmetric Toeplitz-plus-Hankel Bezoutians, *Electronic Transactions on Numerical Analysis*, **42** (2014), 106-135.
8. T. Ehrhardt and K. Rost, Resultant matrices and inversion of Bezoutians, *Linear Algebra Appl.*, **439** (2013), 621-639.
9. T. Ehrhardt and K. Rost, On the kernel structure of generalized resultant matrices, *Indagationes Mathematicae* **23** (2012), 1053-1069.
10. K. Rost, Matrix representations of Split Bezoutians, *Linear Algebra Appl.*, **436** (2012), 3904-3918.
11. G. Heinig and K. Rost, Fast algorithm for Toeplitz and Hankel matrices, *Linear Algebra Appl.*, **435** (2011), 1-59.
12. G. Heinig and K. Rost, Introduction to Bezoutians, *Operator Theory: Advances and Appl.*, **199** (2010), 25-118.

13. K. Rost, G. Heinig: A personal memoir and application, *Operator Theory: Advances and Appl.*, **199** (2010), 7-24.
14. K. Rost, Toeplitz-plus-Hankel Bezoutians and Inverses of Toeplitz and Toeplitz-plus-Hankel matrices, *Operators and Matrices*, **2** (2008), 385-406.
15. P. Junghanns and K. Rost, Matrix representations associated to collocation methods for Cauchy singular integral equations, *Math. Meth. Appl. Sci.*, **30** (2007), 1811-1821.
16. G. Heinig and K. Rost, Split algorithms for centrosymmetric Toeplitz-plus-Hankel matrices with arbitrary rank profile, *Operator Theory: Advances and Appl.*, **171** (2007), 129-146.
17. K. Rost, G. Heinig: November 24, 1947–May 10, 2005, A personal memoir and appreciation, *Linear Algebra Appl.*, **413** (2006), 1–12.
18. G. Heinig and K. Rost, Schur-type algorithms for the solution of Hermitian Toeplitz systems via factorization, *Operator Theory: Advances and Appl.*, **160** (2005), 233-252.
19. G. Heinig and K. Rost, Fast "split" algorithms for Toeplitz and Toeplitz-plus-Hankel matrices with arbitrary rank profile, *Proceedings of the International Conference on Mathematics and its Applications (ICMA 2004)*, 285–312, Kuwait Univ. Dep. Math. Comput. Sci., Kuwait, 2005.
20. G. Heinig and K. Rost, Split algorithms for symmetric Toeplitz matrices with arbitrary rank profile, *Numer. Linear Algebra Appl.*, **12**, 2-3 (2005), 141–151.
21. P. Junghanns and K. Rost, Krylov subspace methods for Cauchy singular integral equations, *Facta Universitatis, Ser. Math. Inform.* **19** (2004), 93–108.
22. A. Böttcher and K. Rost, Topics in the numerical linear algebra of Toeplitz and Hankel matrices, *GAMM Mitteilungen: Applied and Numerical Linear Algebra*, **27**, 2 (2004), 174–188.
23. U. Luther and K. Rost, Matrix exponentials and inversion of confluent Vandermonde matrices, *ETNA* **18** (2004), 91–100.
24. G. Heinig and K. Rost, Split Algorithms for Hermitian Toeplitz matrices with arbitrary rank profile, *Linear Algebra Appl.*, **392** (2004), 235–253.
25. G. Heinig and K. Rost, Split algorithms for skewsymmetric Toeplitz matrices with arbitrary rank profile, *Theoretical Computer Science*, **315**, 2–3, (2004), 453–468.

26. G. Heinig and K. Rost, New fast algorithms for Toeplitz-plus-Hankel matrices, *SIAM Journal Matrix Anal. Appl.*, **25**, 3, (2003), 842–857.
27. G. Heinig and K. Rost, Fast algorithms for centro-symmetric and centro-skewsymmetric Toeplitz-plus-Hankel matrices, *Numerical Algorithms*, **33**, (2003), 305–317.
28. G. Heinig and K. Rost, Centro-symmetric and centro-skewsymmetric Toeplitz-plus-Hankel matrices and Bezoutians, *Linear Algebra Appl.*, **366**, (2003), 257–281.
29. G. Heinig and K. Rost, Fast algorithms for skewsymmetric Toeplitz matrices, *Operator Theory: Advances and Applications*, **135**, (2002), 193–208.
30. P. Junghanns, K. Müller and K. Rost, On collocation methods for nonlinear Cauchy singular integral equations, *Operator Theory: Advances and Applications*, **135**, (2002), 209–233.
31. G. Heinig and K. Rost, Split algorithm and ZW-factorization for Toeplitz and Toeplitz-plus-Hankel matrices, *Proceedings of the MTNS, Notre Dame 2002*.
32. M. K. Ng, K. Rost and Y.-W. Wen, On inversion of Toeplitz matrices, *Linear Algebra Appl.* **348** (2002), 145–151; MR 1 902 121
33. G. Heinig and K. Rost, Centro-symmetric and centro-skewsymmetric Toeplitz matrices and Bezoutians, Special issue on structured and infinite systems of linear equations, *Linear Algebra Appl.* **343/344** (2002), 195–209; MR 2002m:15034
34. G. Heinig and K. Rost, Efficient inversion formulas for Toeplitz-plus-Hankel matrices using trigonometric transformations, in *Structured matrices in mathematics, computer science, and engineering, II (Boulder, CO, 1999)*, 247–264, *Contemp. Math.*, 281, Amer. Math. Soc., Providence, RI, 2001; MR 2002f:65057
35. G. Heinig and K. Rost, Representations of Cauchy matrices with Chebyshev nodes, *Advances in Computation: Theory and Practice*, **4**, Nova Science Publ., Inc., Huntington, New York (2001), 135–147.
36. G. Heinig and K. Rost, Hartley transform representations of symmetric Toeplitz matrix inverses with application to fast matrix-vector multiplication, *SIAM J. Matrix Anal. Appl.* **22** (2000), no. 1, 86–105 (electronic); MR 2001i:15003
37. G. Heinig and K. Rost, Hartley transform representations of inverses of real Toeplitz-plus-Hankel matrices, *Proceedings of the International Conference on Fourier Analysis and Applications (Kuwait, 1998)*, *Numer. Funct. Anal. Optim.* **21** (2000), no. 1-2, 175–189; MR 2001d:15004

38. K. Rost and Z. Vavřín, Rational interpolation and recursive solution of Löwner-Vandermonde systems of equations, *J. Comput. Appl. Math.* 114 (2000), no. 2, 319–331. *J. Comput. Appl. Math.* **114** (2000), no. 2, 319–331; MR 2000m:65041
39. G. Heinig and K. Rost, Representations of inverses of real Toeplitz-plus-Hankel matrices using trigonometric transformations, in *Large-scale scientific computations of engineering and environmental problems, II (Sozopol, 1999)*, 80–86, Vieweg, Braunschweig, 2000; see MR 2001c:65006
40. G. Heinig and K. Rost, DFT representations of Toeplitz-plus-Hankel Bezoutians with application to fast matrix-vector multiplication, *ILAS Symposium on Fast Algorithms for Control, Signals and Image Processing (Winnipeg, MB, 1997)*, *Linear Algebra Appl.* **284** (1998), no. 1-3, 157–175; MR 99j:65037
41. K. Rost and Z. Vavřín, Inversion formulas and fast algorithms for Löwner-Vandermonde matrices, *Proceedings of the Sixth Conference of the International Linear Algebra Society (Chemnitz, 1996)*, *Linear Algebra Appl.* **275/276** (1998), 537–549; MR 99d:65094
42. G. Heinig and K. Rost, Representations of Toeplitz-plus-Hankel matrices using trigonometric transformations with application to fast matrix-vector multiplication, *Proceedings of the Sixth Conference of the International Linear Algebra Society (Chemnitz, 1996)*, *Linear Algebra Appl.* **275/276** (1998), 225–248; MR 99d:65091
43. K. Rost and Z. Vavřín, Recursive solution of Löwner-Vandermonde systems of equations, II, Special issue honoring Miroslav Fiedler and Vlastimil Pták, *Linear Algebra Appl.* **223/224** (1995), 597–617; MR 97a:15007
44. K. Rost and Z. Vavřín, Recursive solution of Löwner-Vandermonde systems of equations, I, *Linear Algebra Appl.* **233** (1996), 51–65; MR 97a:15006
45. G. Heinig and K. Rost, Recursive solution of Cauchy-Vandermonde systems of equations, *Linear Algebra Appl.* **218** (1995), 59–72; MR 96a:15002
46. K. Rost, Generalized Lyapunov equations, matrices with displacement structure, and generalized Bezoutians, *Linear Algebra Appl.* **193** (1993), 75–93; MR 94g:15010
47. K. Rost, Generalized companion matrices and matrix representations for generalized Bezoutians, *Linear Algebra Appl.* **193** (1993), 151–172; MR 94g:15005
48. T. Finck, G. Heinig and K. Rost, An inversion formula and fast algorithms for Cauchy-Vandermonde matrices, *Linear Algebra Appl.* **183** (1993), 179–191; MR 93m:65034

49. K. Rost, Möbius transformations, matrix representations for generalized Bezoutians, and fast algorithms for displacement structured systems of equations, *Wiss. Z. Tech. Univ. Chemnitz* **33** (1991), no. 1, 29–36; MR 93b:65072
50. T. Finck and K. Rost, Fast inversion of Cauchy-Vandermonde matrices, in *Seminar Analysis (Berlin, 1989/1990)*, 69–79, Karl-Weierstrass-Inst. Math., Berlin, 1990; MR 92d:65081
51. G. Heinig and K. Rost, Matrices with displacement structure, generalized Bezoutians, and Moebius transformations, in *The Gohberg anniversary collection, Vol. I (Calgary, AB, 1988)*, 203–230, Birkhäuser, Basel, 1989; MR 91b:15002
52. G. Heinig and K. Rost, Inversion of matrices with displacement structure, *Integral Equations Operator Theory* **12** (1989), no. 6, 813–834; MR 90j:15008
53. G. Heinig, W. Hoppe and K. Rost, Structured matrices in interpolation and approximation problems, *Wiss. Z. Tech. Univ. Karl-Marx-Stadt* **31** (1989), no. 2, 196–202; MR 90g:41002
54. G. Heinig, P. Jankowski and K. Rost, Tikhonov regularization for block Toeplitz matrices, *Wiss. Z. Tech. Univ. Karl-Marx-Stadt* **30** (1988), no. 1, 41–45; MR 90a:65063
55. G. Heinig and K. Rost, Matrix representations of Toeplitz-plus-Hankel matrix inverses, *Linear Algebra Appl.* **113** (1989), 65–78; MR 89m:15009
56. G. Heinig, P. Jankowski and K. Rost, Fast inversion algorithms of Toeplitz-plus-Hankel matrices, *Numer. Math.* **52** (1988), no. 6, 665–682; MR 89j:65054
57. G. Heinig and K. Rost, On the inverses of Toeplitz-plus-Hankel matrices, *Linear Algebra Appl.* **106** (1988), 39–52; MR 89e:15035
58. G. Heinig and K. Rost, Inversion of generalized Toeplitz-plus-Hankel matrices, Fast inversion algorithms of Toeplitz-plus-Hankel matrices, *Wiss. Z. Tech. Univ. Karl-Marx-Stadt* **29** (1987), no. 2, 209–211; MR 88j:15003
59. G. Heinig and K. Rost, Fast inversion of Toeplitz-plus-Hankel matrices, *Wiss. Z. Tech. Hochsch. Karl-Marx-Stadt* **27** (1985), no. 1, 66–71; MR 86m:15003
60. G. Heinig and K. Rost, Invertierung von Toeplitzmatrizen und ihren Verallgemeinerungen, I. Die Methode der *UV*-Reduktion, *Beiträge Numer. Math.*, **12**, (1984), 55–73; MR 86j:65034
61. G. Heinig and K. Rost, Schnelle Invertierungsalgorithmen für einige Klassen von Matrizen, *Wiss. Z. Tech. Hochsch. Karl-Marx-Stadt* **26** (1984), no. 2, 235–241; MR 86h:65036

62. G. Heinig and K. Rost, *Invertierung einiger Klassen von Matrizen und Operatoren. I. Endliche Toeplitzmatrizen und ihre Verallgemeinerungen*, Tech. Hochschule Karl-Marx-Stadt, Wiss. Inform. **12**, 1979; MR 83i:15009
63. B. Silbermann and K. Rost, *Das Reduktionsverfahren für eine Klasse ausgearteter Integrodifferenzgleichungen*, Wiss. Z. Tech. Hochsch. Karl-Marx-Stadt **20** (1978), no. 6, 689–691; MR 82i:45013
64. G. Heinig and K. Rost, *Über homogene Gleichungen vom Faltungstyp auf einem endlichen Intervall*, Demonstratio Math. **10** (1977), no. 3-4, 791–806; MR 58: 23408