

Publications of Nicholas Young

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Books

1. *An Introduction to Hilbert Space*, 240pp, Cambridge University Press, 1988.
2. *Surveys in Geometry and Number Theory*, 318 pp, Editor, LMS Lecture Notes **338**, Cambridge University Press, 2007.
3. *Surveys in Contemporary Mathematics*, 361 pp, Edited by Y. Choi and N. J. Young, LMS Lecture Notes **347**, Cambridge University Press, 2008.

Papers

1. On Pták's double limit theorems, *Proc. Edinburgh Math. Soc.* **17** (1971)193–200.
2. Admixtures of two-person games, *Proc. London Math. Soc.* (3) **25** (1972) 736–750.
3. Separate continuity and multilinear operations, *Proc. London Math. Soc.* (3) **26** (1973) 289–319.
4. The irregularity of multiplication in group algebras, *Quarterly J. Math.* (2) **24** (1973) 59–62.
5. Compactness in function spaces: another proof of a theorem of J.D. Pryce, *J. London Math. Soc.* (2) **6** (1973) 739–740.
6. Semigroup algebras having regular multiplication, *Studia Math.* **47** (1973) 191–196.
7. (with I.G. Craw) Regularity of multiplication in weighted group and semigroup algebras, *Quarterly J. Math.* (2) **25** (1974) 351–358.
8. Periodicity of functionals and representations of normed algebras on reflexive spaces, *Proc. Edinburgh Math. Soc.* **20** (1976) 99–120.
9. Analytic programmes in matrix algebras, *Proc. London Math. Soc.* (3) **36** (1978) 226–242.
10. Norms of matrix powers, *Comment. Math. Univ. Carolinae* **19** (1978) 415–430.
11. Norms of certain rational functions of a matrix and Schur's criterion for polynomials, *Comment. Math. Univ. Carolinae* **19** (1978) 673–688.
12. Norms of powers of matrices with constrained spectra, *Linear Algebra and its Applications* **23** (1979) 227–244.
13. An identity which implies Cohn's theorem on the zeros of a polynomial, *J. Math. Analysis and its Applications* **70** (1979) 240–248.
14. Linear fractional transformations of companion matrices, *Glasgow Math. J.* **20** (1979) 129–132.
15. Formulae for the solution of Lyapunov matrix equations, *International J. Control* **31** (1980) 159–179.
16. (with V. Pták) Functions of operators and the spectral radius, *Linear Algebra and its Applications* **29** (1980) 357–392.

17. Matrices which maximise any analytic function, *Acta Math. Acad. Sci. Hungaricae* **34** (1979) 239–247.
18. Norm and spectral radius for algebraic elements of a Banach algebra, *Math. Proc. Cambridge Phil. Soc.* **88** (1980) 129–133.
19. The solution of Lyapunov matrix equations by a geometric method, *Math. Proc. Royal Soc. Edinburgh* **86A** (1980) 437–354.
20. (with V. Pták) A generalization of the zero location theorem of Schur and Cohn, *Trans. Inst. Electrical and Electronic Engineers on Automatic Control* **25** (1980) 978–980.
21. Functions of canonical matrices, *Linear and Multilinear Algebra* **9** (1980) 141–149.
22. Functions of contractions, Möbius transformations and classical interpolation problems, *Proc. 4th Rumanian Operator Theory Conference*, University of Timisoara Press 1980, pp.330–334.
23. The rate of convergence of a matrix power series, *Linear Algebra and its Applications* **35** (1981) 261–278.
24. A bound for norms of functions of matrices, *Linear Algebra and its Applications* **37** (1981) 181–186.
25. A maximum principle for interpolation in H^∞ , *Acta Sci. Math. (Szeged)* **43** (1981) 147–152.
26. (with V. Pták) Zero location by Hermitian forms: the singular case, *Linear Algebra and its Applications* **43** (1982) 181–196.
27. A simple proof of Hermite’s theorem on the zeros of a polynomial, *Glasgow Math. J.* **24** (1983) 125–128.
28. The singular-value decomposition of an infinite Hankel matrix, *Linear Algebra and its Applications* **50** (1983) 639–656.
29. (with A.C. Allison) Numerical algorithms for the Nevanlinna-Pick problem, *Numerische Math.* **42** (1983) 125–145.
30. Linear fractional transformations in rings and modules, *Linear Algebra and its Applications* **56** (1984) 251–290.
31. Maximum principles for quotient norms in H^∞ , pp. 53–54 in *Linear and Complex Analysis Problem Book*, Lecture Notes in Mathematics 1043, Springer Verlag, Heidelberg, 1984.
32. Power transfer, non-Euclidean geometry of operators and complex interpolation, *Berichte der Mathematisch-Statistischen Sektion im Forschungszentrum Graz* **213** (1983) 1–18.
33. Orbits of the unit sphere of $L(H, K)$ under symplectic transformations, *J. of Operator Theory* **11** (1984) 171–191.
34. J -unitary equivalence of positive subspaces of a Krein space, *Acta Sci. Math.* **47** (1984) 107–111.
35. Interpolation by analytic matrix functions, in “Operators and Function Theory”, edited by S.C. Power, NATO ASI Series C Vol. **153**, D. Reidel Publishing Co., 1985, pages 351–383.
36. Balanced realizations via model operators, *International J. Control* **42** (1985) 369–389.
37. The Nevanlinna-Pick problem for matrix-valued functions, *J. Operator Theory* **15** (1986) 239–265.

38. Balanced, normal and intermediate realizations of non-rational transfer functions, *IMA J. Mathematical Control and Information* **3** (1986) 43–58.
39. Balanced realizations in infinite dimensions, in “Operator Theory and Systems: Proceedings Workshop Amsterdam, June 4–7, 1985”, edited by H. Bart, I. Gohberg and M.A. Kaashoek, Birkhauser Verlag, 1986.
40. Super-optimal Hankel norm approximations, pages 47–56, “Modelling, Robustness and Sensitivity Reduction in Control Systems”, edited by R. Curtain, Springer Verlag, 1987.
41. (with K. D. Gregson) Finite representations of block Hankel operators and balanced realizations, *Operator Theory: Advances and Applications* Vol. 36, pages 441–480, Birkhäuser Verlag, Basel 1988.
42. (with J. W. Helton) Approximation of Hankel operators: truncation error in an H^∞ design method, in *Signal Processing Part II: Control Theory and Applications*, ed. F.A. Grunbaum, J.W. Helton and P. Khargonekar, pp. 115–137, Springer-Verlag 1990.
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44. Polynomial methods for the singular value decomposition of block Hankel operators, *Systems and Control Letters*, **14** (1990) 103–112.
45. (with J.W. Helton and P.G. Spain), Tracking poles and representing Hankel operators directly from data, *Numerische Mathematik* 58 (1990) 641–660.
46. Best analytic approximation of rational functions of degree 2, *International J. Robust and Nonlinear Control* **1** (1990) 3–5.
47. (with H. Dym) Factorization and the Schur-Cohn matrix of a matrix polynomial, *Integral Equations and Operator Theory*, 15 (1992) 1–15.
48. The observability gramian of the observer form and the Schur-Cohn matrix, *IMA Journal of Control and Information*, 9 (1992) 55–60.
49. The Nehari problem and optimal Hankel norm approximation, in “Analysis and Optimization of Systems: State and Frequency Domain Approaches for Infinite-Dimensional Systems”, Ed. R.F. Curtain, Springer Lecture Notes in Control and Information Sciences 185, (1993) 199–221.
50. (with V. V. Peller) Superoptimal analytic approximations of matrix functions, *J. Functional Analysis* **120** (1994) 300–343.
51. (with V. V. Peller) Superoptimal singular values and indices of matrix functions, *Integral Equations and Operator Theory* **20** (1994) 350–363.
52. (with V. V. Peller) Construction of superoptimal approximants, *Math. of Control, Signals and Systems* **8** (1995) 118–137 (ISSN 0932-4194).
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54. Review of *Theory of commuting non-self-adjoint operators* by M. S. Livšic, N. Kravitsky, A. S. Markus and V. Vinnikov, Kluwer 1995. In *Bull London Math. Soc.*, 1996.

55. (with V. V. Peller) Continuity properties of best analytic approximation, *J. für die Reine und Angewandte Mathematik* **483** (1997) 1–22.
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59. (with J. Agler) A converse to a theorem of Adamyan, Arov and Krein, *J. Amer. Math. Soc.* **12**(1999) 305–333.
60. (with J. Agler) Operators having the symmetrized bidisc as a spectral set, *Proc Edinburgh Math. Soc.* **43** (2000) 195–210.
61. (with J. A. Ball) Problems on the realization of functions, *Fields Inst. Communications* **25** (2000) 179–185 (the Proceedings of a conference on applied operator theory, Winnipeg, 1998).
62. (with J. Agler) The two-point spectral Nevanlinna-Pick problem, *Integral Equations Operator Theory* **37** (2000) 375–385.
63. (with J. Agler) A Schwarz Lemma for the symmetrized bidisc, *Bull. London Math. Soc.* **33** (2001) 175–186.
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72. (with A. A. Abouhajar and M. C. White) A Schwarz lemma for a domain related to mu-synthesis, *J. Geometric Analysis* **17** (2007) 717-750, arXiv:0708.0637 .
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75. (with J. Agler) Boundary Nevanlinna-Pick interpolation via reduction and augmentation, *Mathematische Zeitschrift* **268** (2011) 791-817, arXiv:0905.4759
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83. (with J. Agler and Z. A. Lykova) Extremal holomorphic maps and the symmetrized bidisc, *Proc. London Math. Soc.* **106** (4) (2013) 781-818.
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100. (with J. Agler and Z. A. Lykova), Carathéodory extremal functions on the symmetrized bidisc, to appear in the Kaashoek birthday volume, Birkhäuser OT series, ed. ter Horst et al.

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