

PUBLICATIONS

Books

(with M. Martin) Lectures on Hyponormal Operators, Birkhäuser Verlag, Basel-Boston-Berlin, 1989.

(with J. Eschmeier) Spectral Decompositions and Analytic Sheaves, London Math. Monographs Vol. 10, Clarendon Press, Oxford, 1996.

(with B. Gustafsson) Hyponormal Quantization of Planar Domains. Exponential Transform in Two Dimensions, Lect. Notes Math. vol. 2199, Springer, Berlin, 2017.

(with J.-B. Lasserre, E. Pauwels) Christoffel-Darboux Kernel for Data Analysis, Cambridge Monographs on Applied and Computational Mathematics, Cambridge University Press, 2022.

Edited volumes

Multivariable Spectral Theory. The Joerg Eschmeier Memorial Volume (E. Albrecht, R. Curto, M. Hartz, M. Putinar, editors), Birkhauser, Switzerland, 2023.

Mihnea Coltoiu Memorial Volume (C. Joita, M. Putinar, editors) Rev. Roumaine Math. Pures Appl. LXVIII, No. 1-2, 2023.

In Memory of Harold Seymour Shapiro (P. Ebenfelt, B. Gustafsson, D. Khavinson, M. Putinar, editors) Analysis Math Physics, 2022.

Analysis of Operators on Function Spaces, The Serguei Shimorin Memorial Volume (A. Aleman, H. Hedenmalm, D. Khavinson, M. Putinar, editors), Trends in Math., Birkhauser, Switzerland, 2019.

Mathematical methods in systems, optimization and control (H. Dym, M. de Oliveira, M. Putinar, editors), Operator Theory: Advances and Applications, Birkhäuser, Basel, 2012.

Notions of Positivity and the Geometry of Polynomials (P. Brändén, M. Passare, M. Putinar, editors), Trends in Math., Birkhäuser, Basel, 2011.

Björn Gustafsson Festschrift (D. Crowdy, M. Mineev-Weinstein, M. Putinar, eds.), Complex Analysis and Operator Theory vol. 3-2, 2009.

Emerging Applications of Algebraic Geometry (M. Putinar, S. Sullivant, eds.), The IMA Volumes in Mathematics and its Applications, vol. 149, Springer, Berlin, 2009.

Operator Theory, Structured Matrices, and Dilations (M. Bakonyi, A. Gheondea, M. Putinar, J. Rovnyak, eds.), Theta, Bucharest, 2007.

Physics and Mathematics of Growing Interfaces - In honor of Stan Richardson's discoveries in Laplacian Growth and related free boundary problems (M. Mineev, M. Putinar, L. Sander, A. Zabrodin, eds.), Physica D 235, 2007.

Quadrature Domains and Their Applications, The Harold S. Shapiro Anniversary Volume (P. Ebenfelt, B. Gustafsson, D. Khavinson, M. Putinar, eds.) Birkhäuser, Basel, 2005.

Operator algebras and operator theory (W. B. Arveson, A. S. Mischenko, M. Putinar, M. Rieffel, S. Stratila, eds.), Pitman Res. Notes Math. vol 271-272, Longman Sci. and Techn. Harlow, 1992.

Submitted:

(with K. Ando, H. Kang, Y. Miyanishi) Generic properties of the Neumann-Poincare operator: simplicity of eigenvalues and cyclic vectors

(with K. Ando, H. Kang, Y. Miyanishi) Carleman factorization of layer potentials on smooth domains

(with A. Belton, D. Guillot, A. Khare) Matrix positivity preservers in fixed dimension. II: positive definiteness and strict monotonicity of Schur function ratios

(with A. Belton, D. Guillot, A. Khare) Negativity-preserving transforms of tuples of symmetric matrices

(with D. Kimsey) Moment indeterminateness: the Marcel Riesz variational principle

2024

1. (with S. Chavan, R. Curto, Z. J. Jablonski, I. B. Jung) Jan Stochel, a stellar mathematician, *Opuscula Math.* 44:3(2024), 303-321.

2023

1. (with E. Albrecht, R. Curto, M. Hartz) Joerg Eschmeier mathematical work, *Complex Analysis Operator Theory*, 17:3(2023), 18 pp.
2. (with G. W. Milton) A theory of composites perspective on matrix valued Stieltjes functions, *Expo. Math.* 41(2023), 186-201.
3. (with O. Mattei, G. W. Milton) Determining the volume fraction in 2-phase composites and bodies using time varying applied fields, *J. Mech. Physics Solids* 175(2023) 105292, 16 pp.
4. (with O. Mattei, G. W. Milton) An extremal problem arising in the dynamics of two-phase materials that directly reveals information about the internal geometry, *Comm. Pure Appl. Math.* 76:10(2023), 2372-2409.
5. (with A. Belton, D. Guillot, A. Khare) Totally positive kernels, Polya frequency functions, and their transforms, *J. d'Analyse Math.* 150(2023), 83-158.

2022

1. (with A. Belton, D. Guillot, A. Khare) Hirschman-Widder densities, *Appl. Comp. Harmonic Analysis* 60(2022), 396-425.
2. (with A. Belton, D. Guillot, A. Khare) Moment-sequence transforms, *J. Europ. Math. Soc.* 24(2022), 3109-3160.
3. (with A. Belton, D. Guillot, A. Khare) Matrix compression along isogenic blocks, *Acta Sci. Math. (Szeged)* 88(2022), 417-448.
4. (with A. Belton, D. Guillot, A. Khare) Preservers of totally-positive kernels and Polya frequency functions, *Math. Res. Reports* 3 (2022), 35-56.
5. (with S. Biswas) Approximation in the mean on rational curves, *Complex Analysis Operator Theory*, 16:73(2022), 9 pp.

2021

1. (with K. Ando, H. Kang, Y. Miyanishi) Spectral analysis of Neumann-Poincare operator, *Rev. Roumaine Math. Pures Appl.* 66(2021), 545-575.
2. (with D. Yakubovich) Spectral dissection of finite rank perturbations of normal operators, *J. Operator Theory* 85:1(2021), 45-78.
3. (with E. Pauwels, J. B. Lasserre), Data analysis from empirical moments and Christoffel function, *Found. Comp. Math.* 21(1)(2021), 243-273.
4. (with B. Beckermann, E. B. Saff, N. Stylianopoulos) Perturbations of Christoffel-Darboux kernels: detection of outliers, *Found. Comp. Math.* 21(1)(2021), 71-124.
5. Superresolution of principal semi-algebraic sets, *Analysis Math. Physics* 11:107(2021), 14pp.
7. (with D. Kimsey) The moment problem on curves with bumps , *Math. Zeitschrift* 298(2021), 935-942.
8. Spectral analysis of 2D outlier layout, *J. Spectral Theory* 11(2021), 821-845.
9. Moment estimates of the cloud of a planar measure, *Acta. Appl. Math.* 176:2(2021), 26 pp.

2020

1. (with M. Korda, I. Mezić) Data driven computation of the spectrum of the Koopman operator, *Appl. Comp. Harmonic Analysis* 48(2020), 599-629.
2. (with A. Belton, D. Guillot, A. Khare) A panorama of positivity II: Fixed-dimension, in vol. *Complex Analysis and Spectral Theory (G.Dales, D.Khavinson, J. Masreghi, eds.) Contemporary Math. CRM Proceedings, Amer. Math. Soc., Providence, R.I. 2020, pp. 109-150.*
3. (with B. Gustafsson) Finite term relations for exponential orthogonal polynomials, *Math. Model. Natural Phenomena* 15(2020) No. 5, 25 pg.
4. (with Pham Viet Hai) Complex symmetric evolution equations, *Analysis and Math. Physics* 10(2020), 36 pg.
5. (with Pham Viet Hai) Multi-valued weighted composition operators on Fock space, *Adv. Operator Theory* 5(2020), 1261-1296.

6. (with R. Curto, H. de Snoo, J.-P. Gazeau, A. Horzela, M. S. Moslehian, K. Schmudgen, J. Stochel) Mathematical work of Franciszek Hugon Szafraniec and its impacts, *Adv. Operator Theory* 5(2020), 1297-1313.

2019

1. (with H. Ammari, M. Ruiz, S. Yu, H. Zhang) Shape reconstruction of nanoparticles from their associated plasmonic resonances, *J. Math. Pures Appl.* 122(2019), 23-48.
2. (with M. Charina, C. Conti, M. Cotronei) System Theory and orthogonal multi-wavelets, *J. Approx. Theory* 238(2019), 85-102.
3. (with J.B. Lasserre) Positive functionals and Hessenberg matrices, *Proc. Amer. Math. Soc.* 147(2019), 1097- 1108.
4. (with B. Gustafsson) A field theoretic operator model and Cowen-Douglas class, *Banach J. Math. Analysis* 13(2019), 338-358.
5. (with S. Shimorin) Positive integral kernels for polar derivatives, in vol. *Analysis of Operators on Function Spaces, The Serguei Shimorin memorial Volume* (A. Aleman, H. Hedenmalm, D. Khavinson, M. Putinar, editors), *Trends in Math.*, Birkhauser, Switzerland, pp. 251-258.
6. (with A. Belton, D. Guillot, A. Khare) A panorama of positivity I: Free-dimension, in vol. *Analysis of Operators on Function Spaces, The Serguei Shimorin memorial Volume* (A. Aleman, H. Hedenmalm, D. Khavinson, M. Putinar, editors), *Trends in Math.*, Birkhauser, Switzerland, pp. 117-166.
7. (with A. Belton, D. Guillot, A. Khare) Simultaneous kernels of matrix Hadamard powers, *Linear Alg. Appl.* 576(2019), 142-157.
8. (with H. Ammari, A. Steenkamp, F. Triki) Identification of an algebraic domain in two dimensions from a finite number of its generalized polarization tensors, *Math. Ann.* 375(2019), 1337-1354.
9. (with H. Ammari, A. Steenkamp, F. Triki) Reconstruction of domains with algebraic boundaries from generalized polarization tensors, *SIAM J. Math. Imaging* 12(2019), 2097-2118.

2018

- 1.(with J. Tener) Singular values of weighted composition operators and second quantization, *Int. Mat. Research Notes* 20(2018), 6426–6441.
- 2.(with Pham Viet Hai) Complex symmetric differential operators on Fock space, *J. Differential Equations* 265(2018), 4213-4250.
4. (with D. Kimsey) Complex orthogonal polynomials and numerical quadrature via hyponormality, *Comp. Methods Function Theory* 18(2018), 495-510.
5. (with H. Kang) Spectral permanence in a space with two norms, *Revista Matematica Iberoamericana* 34(2018) no 2, 621-635.
- 6.(with B. Gustafsson) Lines Bundles defined by the Schwarz Function, *Analysis Math. Physics* 8(2018), 171–183.

2017

- 1.(with K.M. Perfekt) The essential spectrum of the Neumann-Poincare operator on a domain with corners, *Arch. Rational Mechanics Appl.* 223(2017), 1019-1033.
2. Finite central truncation in a space with two norms, *Integral Equations Operator Theory* 89(2017), 345-376.

2016

- 1.(with A. Belton, D. Guillot, A. Khare) Matrix positivity preservers in fixed dimension, *C. R. Acad. Sci. Paris, Ser. I.* 354(2016), 143-148.
- 2.(with M. Budisic) Conditioning moments of singular measures for entropy optimization.II, *Contemp. Math.* 661(2016), 283-297.
- 3.(with D. Plaumann) A relative Grace theorem for complex polynomials, *Math. Proc.Cambridge Phil. Soc.* 161(2016), 17-30.
- 4.(with D. Henrion, I. Mezic) Applied Koopmanism, *Oberwolfach Reports* 7(2016), 43pp. DOI: 10.4171/OWR/2016/
- 5.(with A. Belton, D. Guillot, A. Khare) Matrix positivity preservers in fixed dimension. I, *Adv. Math.* 298(2016), 325-368.

6. Hermitian algebra on generalized lemniscates, *Bull. Korean Math. Soc.* 53(2016), 821-831.

7. (with A. Belton, D. Guillot, A. Khare) Schur polynomials and matrix positivity preservers, *Discrete Math. Theor. Comp. Sci. B.C.* (2016), 155-166.

2015

1. (with J.-B. Lasserre) Algebraic-exponential data recovery from moments, *Discrete and Comp. Geometry* (54)2015, 993-1012.

2. (with M. Charina, C. Scheiderer, J. Stoeckler), An algebraic perspective on multivariate tight wavelet frames. II, *Appl. Comp. Harmonic Analysis* 39(2015), 185-213.

2014

1. (with K.-M. Perfekt), Spectral bounds for the Neumann-Poincaré operator on planar domains with corners, *J. d'Analyse Math.* 124(2014), 39-57.

2. (with S.R. Garcia, E. Prodan), Mathematical and Physical aspects of Complex Symmetric Operators, *J. Phys. A: Math. Theor.* 47(2014), 353001 (54 pp).

3. (with C. Scheiderer), Quillen property of real algebraic varieties, *Muenster J. Math.* 7 (2014), 671-696.

2013

1. (with M. Charina, C. Scheiderer, J. Stoeckler), An algebraic perspective on multivariate tight wavelet frames, *Constr. Approx.* 38(2013), 253-276.

2. Matrix Models in Laplacian Growth, in vol. *Advances in Mathematics* (L. Beznea et al., eds.), Romanian Acad. Publ. House, Bucharest, 2013.

3. (with M. Charina, J.-B. Lasserre, J. Stoeckler), Structured function systems, *Oberwolfach Reports* 10(2013), 579-655.

2012

- 1.(with John D'Angelo), Hermitian complexity of real polynomial ideals, *International Journal Math.* 23(2012), No. 6, 1250026, 14 p.
- 2.(with J. B. Lasserre), Positivity and optimization: beyond polynomials, in vol. *Handbook on Semidefinite, Cone and Polynomial Optimization* (M. Anjos, J.-B. Lasserre, eds.), Springer, Basel, 2012, pp. 407-434.
- 3.(with S. Biswas and G. Misra), Unitary invariants for Hilbert modules of finite rank, *J. reine angew. Mathematik* 662(2012), 165-204.
- 4.(with M. Budisic), Conditioning moments of singular measures for entropy optimization.I, *Indag. Math.* 23(2012), 848-883.
- 5.(with R. G. Douglas, Kai Wang), Reducing subspaces for analytic multipliers of the Bergman space, *J. Funct. Analysis* 263(2012), 1744-1765.
- 6.Sums of Hermitian Squares: Old and New, in vol. *Semidefinite optimization and convex algebraic geometry*, (G. Bleckherman, P. Parrilo, R. Thomas, eds.), SIAM, Philadelphia, 2012, pp. 407-446.
- 7.Mathematical methods in systems, optimization and control (H. Dym, M. de Oliveira, M. Putinar, editors), *Operator Theory: Advances and Applications*, Birkhäuser, Basel, 2012.
- 8.(with C. Scheiderer), Hermitian algebra on the ellipse, *Illinois J. Math.* 56(2012), 213-220.

2011

- 1.(with S. Niculescu), A toric Positivstellensatz with applications to delay systems, *C. R. Acad. Sci. Paris, Ser. I.* 349(2011), 327-329.
- 2.(with D. Khavinson, R. Pereira, E.B. Saff, S. Shimorin), Borcea's variance conjectures on the critical points of polynomials, in vol. *Notions of Positivity and the Geometry of Polynomials* (P. Brändén et al., eds.), *Trends in Mathematics 2011*, Birkhäuser, Basel, pp 283-309.
- 3.Book review: Jean-Bernard Lasserre: *Moments, Positive Polynomials and Their Applications*, Imperial College Press, World Sci., Singapore, 2010, ISBN: 978-1-84816-445-1. 384 pages, *Foundations Comput. Math.* 2011, DOI 10.1007/s10208-011-9092-6.
- 4.*Notions of Positivity and the Geometry of Polynomials* (P. Brändén, M. Passare, M. Putinar, editors), *Trends in Math.*, Birkhäuser, Basel, 2011.

2010

- 1.(with C. Scheiderer), Sums of hermitian squares on pseudoconvex boundaries, *Math. Res. Letters* 17(2010), 1047-1053.
- 2.(with F. Jafari), Extremal positive pluriharmonic functions on Euclidean balls, *Pure and Applied Mathematics Quarterly* 6(2010), 1013-1025.
- 3.(with R.E. Curto): Polynomially hyponormal operators. in vol. *A Glimpse at Hilbert Space Operators. Paul R. Halmos in Memoriam, Series: Operator Theory: Advances and Applications, Vol. 207*, Axler, Sheldon; Rosenthal, Peter; Sarason, Donald (Eds.), Birkhäuser, Basel, 2010, pp. 195-207.
- 4.(with D. Khavinson, M. Mineev-Weinstein, R. Teodorescu), Lemniscates do not survive Laplacian Growth, *Math. Res. Letters* 17(2010), 337-343.
- 5.The evolution of Erret Bishop's ideas in abstract spectral theory, *Ann. Univ. Bucharest (Mathematical Series)* 1 (LIX) (2010), 145-154.
- 6.(with J. B. Lasserre), Positivity and optimization for semi-algebraic functions, *SIAM J. Optimization* 20(2010), 3364-3383.

2009

- 1.(with J. W.Helton, S. McCullough, V.Vinnikov), Convex matrix inequalities versus linear matrix inequalities, *IEEE Trans. Automat. Control, Special Issue on Positive Polynomials in Control* 54(2009), 952-964.
- 2.(with S. Kuhlmann), Positive polynomials on projective limits of real algebraic varieties, *Bull. Sci. Math.* 133(2009), 92-111.
- 3.*Emerging Applications of Algebraic Geometry* (M. Putinar, S. Sullivant, eds.), *The IMA Volumes in Mathematics and its Applications*, vol. 149, Springer, Berlin, 2009.
- 4.(with J. d'Angelo), Polynomial optimization on odd-dimensional spheres, in vol. *Emerging Applications of Algebraic Geometry, The IMA Volumes in Mathematics and its Applications*, vol. 149, Springer, Berlin, 2009, pp. 1-16.

- 5.(with M. de Oliveira, J. W. Helton, S. McCullough), Engineering systems and free real algebraic geometry, in vol. Emerging Applications of Algebraic Geometry, The IMA Volumes in Mathematics and its Applications, vol. 149, Springer, Berlin, 2009, pp. 17-63.
- 6.A Striktpositivstellensatz for measurable functions, C. R. Acad. Sci. Paris, Ser. I. 347 (2009), 381-384.
- 7.(with D. Khavinson, M. Mineev-Weinstein), Planar elliptic growth, Complex Analysis Operator Theory 3(2009), 425-452.
- 8.(with V. A. Prokhorov), Compact Hankel forms on planar domains, Complex Analysis Operator Theory 3(2009), 471-500.
- 9.(with B. Gustafsson, E. Saff, N. Stylianopoulos), Bergman polynomials on an archipelago: estimates, zeros and shape reconstruction, Adv. Math. 222(2009), 1405-1460.

2008

- 1.(with B. Gustafsson, E. Saff, N. Stylianopoulos), Les polynômes orthogonaux de Bergman sur un archipel, C. R. Acad. Sci. Paris, Ser. I 346(2008), 499-502.
- 2.(with J. Danciger, S. Garcia), Variational principles for symmetric bilinear forms, Math. Nachrichten 281(2008), 786-802.
- 3.(with S. Garcia), Interpolation and complex symmetry, Tohoku Math. Journal 60(2008), 423- 440.
- 4.(with J.W. Helton and J.-B. Lasserre), Multivariate moment matrices with zeros in their inverse, Ann. Probability 36(2008), 1453-1471.
- 5.(with M. Mineev-Weinstein, R. Teodorescu), Random Matrix Theory in 2D, Laplacian Growth and Operator Theory, J. Phys. A: Math. Theor. 41 No 26 (4 July 2008) 263001 (74pp).
- 6.(with K. Schmüdgen), Multivariate determinateness, Indiana Univ. Math. J. 57:6(2008), 2931-2968.

2007

- 1.(with B. Gustafsson), Analytic continuation of the exponential transform from convex cavities, J. Math. Analysis Appl. 328(2007), 995-1006.

- 2.(with J.W. Helton and S. A. McCullough) Strong majorization in a free $*$ -algebra, Math. Zeitschrift 255(2007), 579-596.
- 3.(with S. Garcia), Complex symmetric operators and applications. II, Trans. Amer. Math. Soc. 359 (2007), 3913-3931.
- 4.(with J.W. Helton), Positive Polynomials in Scalar and Matrix Variables, the Spectral Theorem and Optimization, in vol. Operator Theory, Structured Matrices, and Dilations, Theta, Bucharest, June 2007, pp 229-306.
- 5.M. Bakonyi, A. Gheondea, M. Putinar, J. Rovnyak, eds., Operator Theory, Structured Matrices, and Dilations, Theta, Bucharest, 2007.
- 6.(with D. Khavinson and H.S. Shapiro), On Poincaré's variational problem in potential theory, Arch. Rational Mech. Appl. 185:1(2007), 143-184.
- 7.(with S. Kuhlmann), Positive polynomials on fibre products, C. R. Acad. Sci. Paris, Ser. I 344(2007), 681-684.
- 8.(with G. Putinar), Reconstruction of algebraic sets from dynamic data, Ann. Fac. Sci. Toulouse vol. XIV:3(2007), 647-664.
- 9.(with N. Stylianopoulos), Finite term relations for planar orthogonal polynomials, Complex Analysis and Operator 1(2007), 447-456.
- 10.(with B. Gustafsson), Topics on quadrature domains, Physica D 235(2007), 90-100.
- 11.M. Mineev, M. Putinar, L. Sander, A. Zabrodin, eds., Physics and Mathematics of Growing Interfaces - In honor of Stan Richardsons discoveries in Laplacian Growth and related free boundary problems, Preface, Physica D 235(2007), vii-x.

2006

- 1.(with S. Garcia), Complex symmetric operators and applications, Trans. Amer. Math. Soc. 358(2006), 1285-1315.
- 2.(with E. Prodan and S. Garcia), Norm estimates of complex symmetric operators applied to quantum systems, J. Physics A: Math. Gen. 39(2006), 389-400.
- 3.(with J.W.Helton and S. McCullough) Matrix representation for positive non-commutative polynomials, Positivity 10(2006), 145-163.
- 4.On hermitian polynomial optimization, Arch. Math. 87(2006), 41-51.

5. Uniqueness in multivariate moment problems, Proc. 17-th. Intern. Symp. Mathematical Theory of Networks and Systems, Kyoto 2006, (Y. Yamamoto, ed.), 667-671.
6. (with C. Scheiderer), Multivariate moment problems: geometry and indeterminateness, Ann. Scuola Norm. Sup. Pisa Cl. Sci. (5), vol. V (2006), 137-157.
7. (with C. Banica), On the classification of complex vector bundles of stable rank, Proc. Indian Acad. Sci. (Math. Sci.) 116(2006), 1-20.
8. (with G. Putinar), Restriction eigenfunctions in C^n , Electronic Trans. Numerical Analysis 25(2006), 393-408.
9. (with Linda Patton), On multivariable Fejér inequalities, Acta Sci. Math (Szeged) 72(2006), 129-134.

2005

1. Notes on generalized lemniscates, Operator Theory: Adv. Appl. 157(2005), 243-266.
2. ((with J.W. Helton and S. McCullough), Non-negative hereditary polynomials in a free $*$ -algebra, Math. Zeitschrift 250(2005), 515-522.
3. (co-editor with P. Ebenfelt, B. Gustafsson, D. Khavinson), Quadrature Domains and Their Applications, The Harold S. Shapiro Anniversary Volume, Birkhäuser, Basel, 2005.
4. (with B. Gustafsson), Linear analysis of quadrature domains. IV, Quadrature Domains and Applications, The Harold S. Shapiro Anniversary Volume (P. Ebenfelt et al. eds.), Operator Theory: Advances Appl. vol. 156, Birkhäuser, Basel, 2005, pp. 147-168.
5. (with S. McCullough), Non-commutative sums of squares, Pacific J. Math. 218(2005), 167-171.
6. (with S. Sandberg), A skew normal dilation on the numerical range of an operator, Math. Ann. 331(2005), 345-357.
7. (with J. McCarthy), Positivity aspects of the Fantappiè transform, J. d'Analyse Math. 97(2005), 57-83.

2004

- 1.(with S.Sandberg), Privilege on strictly convex domains, Rend. Acad. Natl. Lincei s. 9, v. 15(2004), 39-45.
- 2.(with J.W.Helton and S. McCullough), A non-commutative Positivstellensatz on isometries, J. reine angew. Math. 568(2004), 71-80.
- 3.A renormalized Riesz transform and applications, Advances in Constructive Approximation (M.Neamtu and E. Saff, eds.), Nashboro Press, Brentwood, TN., 2004, pp. 433-465.
- 4.Restriction operators on Bergman space, Oberwolfach Reports 1(2004), 361-363.

2003

- 1.(with B. Gustafsson), The exponential transform: a renormalized Riesz potential at critical exponent, Indiana Univ. Math. J. 52(2003), 527-568.
- 2.(with F-H. Vasilescu), A uniqueness criterion in the multivariate moment problem, Math. Scand. 92(2003), 295-300.
- 3.(with B. Gustafsson and H.S.Shapiro), Restriction operators, balayage and doubly orthogonal systems of analytic functions, J. Funct. Analysis 199(2003), 332-378.
- 4.(with J. Eschmeier), On bounded analytic extension in C^n , Spectral Theory and Its Applications, The I. Colojoara Anniversary volume (A.Gheondea and M. S,abac, eds.) Theta 2003, Bucharest, pp. 153-160.
- 5.(with D.Alpay, V.Vinnikov), A Hilbert space approach to bounded analytic extension in the ball, Comm. Pure Appl. Analysis 2(2003), 139-145.

2002

- 1.(with J. Eschmeier), Spherical contractions and interpolation problems on the ball, J. reine angew. Math. 542(2002), 219-236.
- 2.On a diagonal Padé approximation in two complex variables, Numer. Math. 93(2002), 131-152.
- 3.(Book review) An introduction to models and decompositions in operator theory, Birkhäuser, Basel, 1997, by C. S. Kubrusly, Zentralblatt für Math. 918.47013.

- 4.(Book review) Orthogonal rational functions, by A. Bultheel, P. González-Vera, E. Hendriksen, O. Njåstad, Cambridge Univ. Press, 1999, Zentralblatt für Math. 923.42017.

2001

- 1.Operator dilations with prescribed commutators, Proc. M. S. Livsic 80-th Birthday Conference (Beer-Sheva, 1997) (D. Alpay, V. Vinnikov, eds.), Operator Theory: Advances and Applications 123(2001), Birkhäuser Verlag, pp. 453-460.
- 2.(with J. Eschmeier), Some remarks on spherical isometries, in vol. "Systems, Approximation, Singular Integral Operators, and Related Topics" (A.A.Borichev and N.K.Nikolskii, eds.), Birkhäuser, Basel et al., 2001, pp. 271-292.
- 3.(with H. Shapiro), The Friedrichs operator of a planar domain. II "Béla Sz.-Nagy Memorial Volume" (L. Kérchy et al., eds.), Operator Theory: Advances and Applications vol. 127 (2001), Birkhäuser, Basel, pp. 519-551.
- 4.(with B. Gustafsson), Analytic continuation of Cauchy and exponential transforms, in vol. Analytic Extension Formulas and their Applications (S.Saitoh, N.Hayashi, M.Yamamoto, eds.), Kluwer, Dordrecht, 2001, pp. 47-58.
- 5.(with G. Putinar), Root separation on generalized lemniscates, Hokkaido Math. J. 30(2001), 705-716.
- 6.An application of the Heisenberg group to abstract algebra, Octagon Math. Magazine 9(2001), 744-745.

2000

- 1.(with B.Gustafsson), Linear analysis of quadrature domains. II, Israel J. Math. 119(2000), 187-216.
- 2.A dilation theory approach to cubature formulas. II, Math. Nachr. 211(2000), 159-175.
- 3.(with B. Gustafsson), On exact quadrature formulas for harmonic functions on polyhedra, Proc. Amer. Math. Soc. 128(2000), 1427-1432.
- 4.(with J. Eschmeier and L. Patton), Carathéodory-Fejér interpolation on the bidisk, Math. Res. Letters 7(2000), 25-34.

- 5.(with H. S. Shapiro, The Friedrichs operator of a planar domain, S. A. Vinogradov Memorial Volume (V. Havin, N. K. Nikolskii, eds.), Birkhäuser Verlag, Basel et al., 2000, pp. 303- 330.
- 6.(with B. Gustafsson, C. He and P. Milanfar), Reconstructing planar domains from their moments, *Inverse Problems* 16(2000), 1053-1070.
- 7.(with G. Golub, B. Gustafsson, P. Milanfar, J. Varah), Shape reconstruction from moments: theory, algorithms, and applications, *SPIE Proceedings vol. 4116(2000), Advanced Signal Processing, Algorithms, Architecture, and Implementations X* (Franklin T.Luk, ed.), pp. 406-416.
- 8.Semi-normal Operator, *Encycl. Math. Sci.* (M. Hazewinkel, ed.), 2nd addition, Kluwer, Dordrecht, 2000, pp. 418- 419.

1999

- 1.(with B. Prunaru), The generic local spectrum of any operator is the full spectrum, *Bull. London Math. Soc.* 31(1999), 332- 336.
- 2.Linear analysis of quadrature domains. III, *J. Math. Anal. Appl.* 239(1999), 101- 117.
- 3.On Weyl spectrum in several variables, *Math. Japon.* 50(1999), 355-357.
- 4.(with F. -H. Vasilescu), Solving moment problems by dimensional extension, *Ann. Math.* 149(1999), 1087- 1107.
- 5.(with F. -H. Vasilescu), Solution du problème des moments par extension dimensionnelle, *C. R. Acad. Sci. Paris, Série I*, 328(1999), 495- 499.
- 6.(with F. -H. Vasilescu), Sur les polynômes positifs sur des ensembles sémi-algébriques, *C. R. Acad. Sci. Paris, Série I*, 328(1999), 585- 589.
- 7.(Featured review) Flat extensions of positive moment matrices: recursively generated relations, by R.E.Curto and L.A. Fialkow, *Math. Reviews Amer. Math. Soc.* 99d:47015.
- 8.(Book review) Flat extensions of positive moment matrices: recursively generated relations, by R.E.Curto and L.A. Fialkow, *Zentralblatt für Math.* 913.47016.

1998

1. Extremal solutions of the L-problem of moments in two variables. II, *J. Approx. Theory* 92(1998), 38-58.
2. Matrix analysis and the Friedrichs operator of a quadrature domain, *Linear Alg. Appl.* 270(1998), 215-229.
3. (with B.Gustafsson), An exponential transform and regularity of free boundaries in two dimensions, *Ann. Scuola Norm Sup. (Pisa)* 26(1998), 507- 543.
4. (Book review) Solution of the truncated complex moment problem for flat data, by R.E.Curto and L.A. Fialkow, *Zentralblatt für Math.* 876.30033.
5. (Featured review) Dual piecewise analytic bundle shift models of linear operators, by D.V. Yakubovich, *Math. Reviews Amer. Math. Soc.* 97b:47024.

1997

1. (with R. Wolff), A natural localization of Hardy spaces in several complex variables, *Ann. Polon. Math.* 66(1997), 183-201.
2. An interpolation problem in tube domains, *Integral Eq. Operator Theory* 28(1997), 330-342.
3. A note on Tchakaloff's theorem, *Proc. Amer. Math. Soc.* 125(1997), 2409-2414.
4. Spectral sets and scalar dilations, *Houston J. Math.* 23(1997), 247-265.
5. A dilation theory approach to cubature formulas, *Expo. Math.* 15(1997), 183-192.
6. A free boundary problem and a related trace formula, in *Differential Equations, Asymptotic Analysis, and Mathematical Physics* (M. Demuth and B.-W. Schulze, eds.), Akademie-Verlag, Berlin 1997, pp. 267-275.
7. (Book review) Holomorphic vector bundles over compact complex surfaces, by V. Brânzanescu, *Zentralblatt für Math.* 848.32024.

1996

1. Extremal solutions of the two dimensional L-problem of moments, *J. Funct. Analysis* 136(1996), 331-364.

- 2.(with F. -H. Vasilescu), Problème des moments sur les compacts semi-algébriques, C. R. Acad. Sci Paris. t. 323, Série I, 787-791, 1996.
- 3.Generalized eigenfunction expansions and spectral decompositions, Linear Operators, Banach Center Publ. vol 38, Polish Acad. Sci., Warszawa, 1996, pp. 265-286.
- 4.(with J. Eschmeier), Spectral Decompositions and Analytic Sheaves, London Math. Mono- graphs Vol. 10, Clarendon Press, Oxford, 1996.
- 5.(Book review) Principal currents for a pair of unitary operators, by J. D. Pincus and Shaojie Zhou, Zentralblatt für Math. 810.47018.

1995

- 1.(with J. Eschmeier),The finite fibre problem and an index formula for elementary operators, Proc. Amer. Math. Soc. 123(1995), 743-746.
- 2.Abstract d''-resolutions for several commuting operators, Contemp. Math. 185(1995), 319-337.
- 3.Linear analysis of quadrature domains, Arkiv för Mat. 33(1995), 357-376.
- 4.On joint spectra of pairs of analytic Toeplitz operators, Studia Math. 115(1995), 129-134.

1994

- 1.Analytically hyponormal weighted shifts, in 'Linear and Complex Analysis Problem Book 3' (V. P. Havin and N. K. Nikolskii, eds.), Lect. Notes Math. vol. 1537, Springer, Berlin, 1994, pp. 370-371.
- 2.Algebraic operators with rank one self-commutator, in 'Linear and Complex Analysis Problem Book 3' (V. P. Havin and N. K. Nikolskii, eds.), Lecture Notes Math. vol. 1537, Springer, Berlin, 1994, pp. 372.
- 3.Liftings of vector-valued analytic functions, in'Linear and Complex Analysis Problem Book 3' (V. P. Havin and N. K. Nikolskii, eds.), Lecture Notes Math. vol. 1537, Springer, Berlin, 1994, pp. 207.
- 4.On the rigidity of Bergman submodules, Amer. J. Math 116(1994), 1421-1432.
- 5.On dense ideals in spaces of analytic functions, Ann. Inst. Fourier 44(1994), 1355-1366.
6. (Book review) The homology of Banach and topological algebras (2nd edition), by A. Ya. Helemskii, Acta Appl. Math. 35(1994), 306-307.

7. On a class of finitely determined planar domains, *Mathematical Research Letters* 1:3(1994), 389-398.

1993

1. (with R. Curto), Nearly subnormal operators and moment problems, *J. Funct. Analysis* 115(1993), 480-497.

2. (with J. Eschmeier), Spectra of analytic Toeplitz tuples on Bergman spaces, *Acta Math. Sci. (Szeged)* 57(1993), 83-100.

3. On a criterion of coherence for Fréchet analytic sheaves, *Rev. Roum. Math. Pures Appl.* 38(1993), 697-702.

4. Positive polynomials on compact semi-algebraic sets, *Indiana Univ. Math. J.* 42(1993), 969-984.

1992

1. Analytic transversality applied to function algebras, in 'Operator algebras and operator theory' (W. B. Arveson et al eds.), *Pitman Res. Notes Math.* vol 271, 1992, pp. 168-183.

2. Sur la complexification du problème des moments, *C. R. Acad. Sci. Paris*, t. 314, Serie I(1992), 743-745.

3. (with N. Salinas), Analytic transversality and Nullstellensatz in Bergman spaces, *Contemp. Math.* 137 (1992), 367-381.

4. Quasi-similarity of tuples with Bishop's property (β), *Int. Equations Operator Theory* 15(1992), 1047-1052.

5. (co-editor with W. B. Arveson, A. S. Mischenko, M. A. Rieffel and S. Stratila), *Operator algebras and operator theory*, *Pitman Res. Notes Math.* vol. 270-271, Longman Sci. and Techn. Harlow, 1992.

6. A reciprocal to the Oka-Grauert principle, *Math. Nachr.* 159(1992), 149-152.

7. (with C. Banica), Fibrés vectoriels complexes de rang stable sur les variétés complexes compactes, *C. R. Acad. Sci. Paris*. t. 314, Serie I (1992), 829-832.

1991

1. Une démonstration du théorème de platitude de Malgrange dans le cas analytique complexe, *Rev. Roum. Math. Pures Appl.* 36(1991), 261-270.
2. Inverse problems in perturbation theory and moment problems, in vol. 'Functional analysis and related topics' (S. Koshi, ed.), World Sci., Singapore, 1991, pp 99-116.
3. (with R. Curto), Existence of non-subnormal polynomially hyponormal operators, *Bull. Amer. Math. Soc.* 25(1991), 373-378.
4. Some problems of spectral analysis on Bergman spaces, *Rev. Union Mat. Argentina* 37(1991), 149-155.
5. (with B. Berceanu, M. Martin, S. Papadima, et al.), Semi-simple Lie Algebras (in Romanian), *Semin. Inst. Math. Romanian Academy*, vol. 1(1991), Bucharest, pp. 255.

1990

1. The L-problem of moments in two dimensions, *J. Funct. Anal.* 94:2(1990), 288-307.
2. Spectral theory and sheaf theory. IV, *Proc. Symp. Pure Math.* 51:2(1990), 273-293.
3. Invariant subspaces of several variable Bergman spaces, *Pacific J. Math.* 147:2(1990), 355-364.

1989

1. (with J. Eschmeier), On quotients and restrictions of generalized scalar operators, *J. Funct. Anal.* 84:1(1989), 115-134.
2. Une caractérisation des modules analytiques quasicohérents, *C. R. Acad. Sci. Paris t. 309 s. I*(1989), 881-884.
3. (with M. Martin), *Lectures on Hyponormal Operators*, Birkhäuser Verlag, Basel-Boston-Berlin, 1989.

1988

1. Extreme hyponormal operators, in vol. 'Special classes of linear operators and other topics', Birkhäuser, Basel-Boston-Stuttgart, 1988, pp. 249-265.
2. A two-dimensional moment problem, *J. Funct. Anal.* 80:1(1988), 1-8.
3. (with J. Eschmeier), Bishop's condition (β) and rich extensions of linear operators, *Indiana Univ. Math. J.* 37:2(1988), 325-348.
4. (Book review) Operators in indefinite metric spaces, scattering theory and other topics (H. Helson et al eds.), *Rev. Roum. Math. Pures Appl.* 33(1988), 261-263.

1987

1. (with C. Banica), On complex vector bundles on projective threefolds, *Invent. Math.* 88(1987), 427-438.
2. (with M. Martin), A unitary invariant for hyponormal operators, *J. Funct. Anal.* 72(1987), 297-323.
3. (with J. Eschmeier), The sheaf E is not topologically flat over O , *Ann. Univ. Craiova* 15(1987), 1-4.
4. (Book review) Homology in Banach and topological algebras (in Russian), by A. Ya. Helemskii, *Zentralblatt für Mathematik* 608(1987), 207-208.

1986

1. Hyponormal operators and eigendistributions, in vol. 'Advances in invariant subspaces and other results of operator theory', Birkhäuser, Basel-Boston-Stuttgart, 1986, pp. 249-273.
2. Spectral theory and sheaf theory. II, *Math. Z.* 192(1986), 473-490.
3. On analytic modules: softness and quasi-coherence, in vol. 'Complex Analysis and Applications '85', Publ. House Bulg. Acad. Sci., Sofia 1986, pp. 534-547.

1985

1. (with C. Banica), On complex vector bundles on rational threefolds, *Math. Proc. Camb. Philos. Soc.* 97(1985), 279-288.

2. (with M. Martin), On hyponormal operators, *St. Cerc. Mat.* 37:5 (1985), 460-465.
3. Base change and the Fredholm index, *Int. Eq. Operator Theory* 8(1985), 674-692.
4. Extensions scalaires et noyaux distribution des opérateurs hyponormaux, *C.R. Acad. Sci. Part. 301 s.I no.15*(1985), 739-741.
5. On Putnam's Inequality: extremal operators, Preprint INCREST 81/1985, 13 pp.

1984

1. Elements of spectral theory of Stein algebras representations (in Romanian), *St. Cerc. Mat.* I 36:3(1984), 193-220; II 36:4(1984), 293-310; III 36:5(1984), 387-408
2. Spectral inclusion for subnormal n-tuples, *Proc. Amer. Math. Soc.* 90:3(1984), 405-406
3. Hyponormal operators are subscalar, *J. Operator Theory* 12(1984), 385-395.
4. Functional calculus and the Gelfand transformation, *Studia Math.* 79:1(1984), 83-86.
5. (with J. Eschmeier), Spectral theory and sheaf theory. III, *J. reine angew. Math.* 354(1984), 150-163.

1983

1. (with F. -H. Vasilescu), Continuous and analytic invariants for deformations of Fredholm complexes, *J. Operator Theory* 9(1983), 3-26.
2. Spectral theory and sheaf theory. I, in vol. 'Dilation theory, Toeplitz operators and other topics', Birkhäuser, Basel-Boston-Stuttgart, 1983, pp.283-298.
3. Uniqueness of Taylor's functional calculus, *Proc. Amer. Math. Soc.* 89:4(1983), 647-650.

1982

1. The superposition property for Taylor's functional calculus, *J. Operator Theory* 7(1982), 149-155.

2. Some invariants for semi-Fredholm systems of essentially commuting operators, *J. Operator Theory* 8(1982), 65-90.
3. (with F.-H. Vasilescu) Local spectral theory needs Frechet spaces, Preprint INCREST 16/1982, 21 pp.

1981

1. One generalization of Tzitzeica's invariant, *Bull Math. Soc. Sci Math. Roumanie*.25(73),1(1981), 75-76

1980

- 1.(with C. Banica and G. Schumacher), Variation der Globalen Ext in Deformationen kompakter komplexer Räume, *Math. Ann.* 250(1980), 135-155.
2. Functional calculus with sections of an analytic space, *J. Operator Theory* 4(1980), 297-306.
3. A remark on the sheaf of distributions (in Romanian), *St. Cerc. Mat.* 32(1980), 709-713.

1979

1. Un invariant centro-affine associé 'a quelques sous-variétés de l'espace euclidien, *Rev. Roum. Math. Pures Appl.* 4(1979), 647-649.
2. Sur les courbes et hypersurfaces de Tzitzeica, *Bull. Math. Soc. Sci. Math. Roumanie t. 23(71):* 4(1979), 419-426.
3. Algebraic properties of Fredholm systems, *Proc. IVth Operator Theory Conference, Timisoara and Herculane, Publ. House Univ. Timisoara 1979*, pp. 187-198.
4. (with C. Banica) *Algebre homologique globale pour une deformation*, Preprint INCREST 31/1979, 6 pp.
5. Three papers on several variable spectral theory, Preprint INCREST 43/1979, 58 pp.

