

## PUBLICATIONS

### (1) Monographs, Lecture Notes

(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.

### (2) Edited volumes

*Analysis of Operators on Function Spaces, The Serguei Shimorin memorial Volume* (A. Aleman, H. Hedenmalm, D. Khavinson, M. Putinar, editors), Trends in Math., Birkhauser, Basel, in preparation.

*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.

### **(3) All publications, in inverse chronological order**

#### **Submitted**

(with Pham Viet Hai) *Complex symmetric differential operators on Fock space*

(with J.B. Lasserre) *Positive functionals and Hessenberg matrices*

(with A. Belton, D. Guillot, A. Khare) *Total positivity preservers*

*Ellipses and Polynomials*

(with S. Shimorin) *Positive integral kernels for polar derivatives*

(with A. Belton, D. Guillot, A. Khare) *Moment-sequence transforms*

#### **2018**

(with M. Korda, I. Mezić) *Data driven computation of the spectrum of the Koopman operator*, Appl. Comp. Harmonic Analysis, to appear.

(with A. Belton, D. Guillot, A. Khare) *Simultaneous kernels of matrix Hadamard powers*, Linear Alg. Appl., doi.org/10.1016/j.laa.2018.03.035

(with D. Kimsey) *Complex orthogonal polynomials and numerical quadrature via hyponormality*, Comp. Methods Function Theory DOI 10.1007/s40315-018-0237-3

(with H. Kang) *Spectral permanence in a space with two norms*, Revista Matematica Iberoamericana 34(2018) no 2, 621-635.

## 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. (with J. Tener) *Singular values of weighted composition operators and second quantization*, Int. Mat. Research Notes <https://doi.org/10.1093/imrn/rnx077>

3. (with H. Ammari, M. Ruiz, S. Yu, H. Zhang) *Shape reconstruction of nanoparticles from their associated plasmonic resonances*, J. Math. Pures Appl. <https://doi.org/10.1016/j.matpur.2017.09.003>

4. *Finite central truncation in a space with two norms*, Integral Equations Operator Theory 89(2017), 345-376.

5. (with M. Charina, C. Conti, M. Cotronei) *System Theory and orthogonal multi-wavelets*, J. Approx. Theory <https://doi.org/10.1016/j.jat.2017.09.004>

6. (with B. Gustafsson) *Lines Bundles defined by the Schwarz Function*, Analysis Math. Physics <https://doi.org/10.1007/s13324-017-0201-9>

## 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.

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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.
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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.

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## 2009

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2. (with S. Kuhlmann), *Positive polynomials on projective limits of real algebraic varieties*, Bull. Sci. Math. 133(2009), 92-111.

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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.

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