

1. Record Nr.	UNINA9910508462503321
Titolo	From operator theory to orthogonal polynomials, combinatorics, and number theory : a volume in honor of Lance Littlejohn's 70th birthday / / Fritz Gesztesy, Andrei Martinez-Finkelshtein, editors
Pubbl/distr/stampa	Cham, Switzerland : , : Birkhauser, , [2021] ©2021
ISBN	3-030-75425-1
Descrizione fisica	1 online resource (388 pages)
Collana	Operator theory, advances and applications ; ; Volume 285
Disciplina	515.724
Soggetti	Operator theory Spectral theory (Mathematics) Teoria espectral (Matemàtica) Teoria d'operadors Homenatges Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Intro -- Preface -- References -- Contents -- Compositions and Chebyshev Polynomials -- 1 Introduction -- 2 Proof of Theorem 1 -- 3 Proof of Theorem 2 -- 4 Proof of Theorem 3 -- 5 Proofs of Theorems 4 and Corollary 1 -- 6 Proof of Theorem 6 and Corollaries -- 7 Further Topics -- References -- Non-negative Extensions of Hamiltonian Systems -- 1 Introduction -- 2 Preliminaries -- 3 The Friedrichs Extension TF of T0 -- 4 Characterisation of Non-negative Extensions TB -- 5 Example: A Fourth Order ODE -- References -- On Simon's Hausdorff Dimension Conjecture -- 1 Introduction -- 2 A Weak Version of Simon's Hausdorff Dimension Conjecture -- 2.1 A Basic Estimate -- 2.2 Prüfer Variables -- 2.3 Unboundedness and Infinite Energy -- 2.4 Proof of Theorem 1.1 and Corollary 1.2 -- References -- Hypergeometric Functions over Finite Fields and Modular Forms: A Survey and New Conjectures -- 1 Introduction -- 2 Preliminaries -- 3 Weight Two Newforms -- 4 Higher Weight Newforms -- 4.1 The Conjectures of Rodriguez Villegas -- 4.2 Conjectures of Evans -- 4.3

Relations with Ramanujan's -Function -- 4.4 Other Relations -- 5
Trace Formulas for Hecke Operators -- 6 New Relations -- References
-- Ballistic Transport for Periodic Jacobi Operators on \mathbb{Z}^d -- 1
Introduction -- 2 Decomposition of J -- 3 Ballistic Motion --
References -- Perspectives on General Left-Definite Theory -- 1
Introduction -- 1.1 Notation -- 2 Sturm-Liouville Operators -- 3 Left-
Definite Theory -- 4 Comparison with BKV Semi-Bounded Form Theory
-- 5 Scale of Spaces from Singular Perturbation Theory -- 6
Perturbation Setup -- Appendix: Extension Theory -- References --
Sampling in the Range of the Analysis Operator of a Continuous Frame
Having Unitary Structure -- 1 Statement of the Problem -- 2 Some
Preliminaries -- 2.1 Continuous and Discrete Frames.
2.2 Discrete Convolution Systems and Frames of Translates -- 3 The
Subspace of $L_2(G)$ Where the Sampling Is Carried Out -- 3.1 Sampling
Data as a Filtering Process -- 4 The Main Sampling Result and
Consequences -- 4.1 Sampling at a Subgroup R with Finite Index in H
-- 4.2 Additional Notes and Remarks -- 4.3 The Case of a Semi-Direct
Product of Groups -- Euclidean Motion Group and Crystallographic
Subgroups -- 4.4 Some Final Comments -- References -- An Extension
of the Coherent Pair of Measures of the Second Kind on the Unit Circle
-- 1 Introduction -- 2 Coherent Pairs of Measures of the Second Kind
-- 2.1 The Case $d_1(z) = 12i z dz$ -- 2.2 The Case $d_1(z)=1|z-$
 $u|212i z dz, u_0$ -- 2.3 A General Case -- 3 Hessenberg Matrices --
4 Sobolev OPUC -- References -- Bessel-Type Operators and a
Refinement of Hardy's Inequality -- 1 Introduction -- 2 An Exactly
Solvable, Strongly Singular, Periodic Schrödinger Operator -- 3 A
Refinement of Hardy's Inequality -- A.1 The Weyl-Titchmarsh-Kodaira
m-Function Associated with T_{σ}, F -- B.1 Remarks on Hardy-Type
Inequalities -- References -- Spectral Theory of Exceptional Hermite
Polynomials -- 1 Introduction -- 2 Some Spectral Theory -- 3 The
Formal Theory of Exceptional Hermite Polynomials -- 3.1 Multi-Step
Factorization Chains -- 3.2 The Norm Identity -- 4 The L_2 Theory --
References -- Occupation Time for Classical and Quantum Walks -- 1
Introduction -- 2 A Look at the Classical Discrete Case -- 3 Occupation
Times for Quantum Walks -- 4 A Look at the Hadamard Walk -- 5 The
Walk with a Constant Coin -- 6 The Even Verblunsky Coefficients Tend
to One -- 7 A Look at the Riesz Walk -- References -- On Foci of
Ellipses Inscribed in Cyclic Polygons -- 1 Introduction -- 2 Background
and Notation -- 3 The Quadrilateral Case -- 4 The Hexagon Case -- 5
The Pentagon Case -- References -- A Differential Analogue of Favard's
Theorem.
1 Introduction -- 2 The Main Theory -- 2.1 Fundamental Results -- 2.2
Relation to Existing Work -- 3 Examples -- 3.1 Jacobi -- 3.2 Hermite
-- 3.3 Generalized Hermite -- 3.4 Laguerre -- 3.5 Generalized
Laguerre -- 3.6 Continuous Hahn -- 4 Computational Considerations
-- 4.1 Computation of Expansion Coefficients -- 4.2 Approximation
Theory on the Real Line -- 5 Periodic Bases Arising from Discrete
Orthogonal Polynomials -- 6 Challenges and Outlook -- 6.1 Transform
Pairs -- 6.2 Location of Zeros -- 6.3 Sobolev Orthogonality -- 6.4
Beyond the Canonical Form -- 6.5 A Freudian Slip-Why We Need More
Polynomials -- References -- Intrinsic Properties of Strongly
Continuous Fractional Semigroups in Normed Vector Spaces -- 1
Introduction -- 2 Background -- 2.1 Logarithmic Norms on Banach
Spaces -- 2.2 Logarithmic Norm Bounds of Classical Semigroups -- 3
Fractional Semigroups -- 3.1 Mittag-Leffler and Wright Functions --
3.2 Logarithmic Norm Bounds of Fractional Semigroups -- 4
Conclusions and Future Endeavors -- References -- The BFK-gluing
Formula for Zeta-determinants and the Conformal Rescaling of a Metric

-- 1 Introduction -- 2 The Metric Rescaling and Invariance Theory -- 3 Proof of Theorem 1 -- 4 Conclusions -- References -- New Representations of the Laguerre-Sobolev and Jacobi-Sobolev Orthogonal Polynomials -- 1 Introduction -- 2 Two Representations of the Laguerre-Sobolev Polynomials -- 3 New Representations of the Jacobi-Sobolev Polynomials -- References -- Compactness, or Lack Thereof, for the Harmonic Double Layer -- 1 Compactness of the Harmonic Double Layer Operator on Lebesgue Spaces -- 2 Failure of Compactness for the Harmonic Double Layer Operator -- References -- Weighted Chebyshev Polynomials on Compact Subsets of the Complex Plane -- 1 Introduction -- 2 Existence, Uniqueness, and Characterization of Weighted Chebyshev Polynomials.
3 Bounds for Weighted Chebyshev Polynomials -- References -- The Eichler Integral of E_2 and q -brackets of t -hook Functions -- 1 Introduction and Statement of Results -- 2 Nuts and Bolts -- 2.1 A Formula of Han -- 2.2 A Formula of Berndt -- 3 Proofs of Results -- 4 Some Examples -- References.
