OP-SF NET – Volume 23, Number 1 – January 15, 2016

The Electronic News Net of the
SIAM Activity Group on Orthogonal Polynomials and Special Functions
http://math.nist.gov/opsf

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Topics:
1. Message from the Chair (January 2016)
2. C. Koutschan, M. Kauers, and D. Zeilberger received 2016 AMS Robbins Prize
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Calendar of Events:

**March 17–21, 2016**
Number Theory in honor of Krishna Alladi’s 60th birthday
University of Florida, Gainesville, Florida, USA
http://www.qseries.org/fgarvan/alladi60.html

**March 22–24, 2016**
40th South African Symposium of Numerical and Applied Mathematics (SANUM)
University of Stellenbosch, South Africa
http://sanum.github.io

**May 20, 2016**
5èmes Journées Approximation 2016,
International Conference on Constructive Complex Approximation
Laboratoire Paul Painlevé, Université de Lille, France
June 5–10, 2016
XII international Conference on Approximation and Optimization
Havana University, Cuba
http://gama.uc3m.es/appopt

June 6 – June 8, 2016
Second joint Conference of the Belgian, Royal Spanish and Luxembourg Mathematical Societies
Special Session on Orthogonal Polynomials and Special Functions
Universidad de la Rioja, Logroño, Spain
http://bsl.unirioja.es

June 27 – July 1, 2016
Abecederian of SIDE (ASIDE) 12 Summer School,
Centre de Recherches mathématiques, Université de Montréal, Montréal, Quebec, Canada
http://www.crm.umontreal.ca/ASIDE16
(We have been informed by the ASIDE16 organizers that this site will be active shortly)

July 3–9, 2016
Symmetries and Integrability of Difference Equations 12,
Hôtel Le Chanteclerc, Saint Adèle, Québec, Canada
http://www.crm.umontreal.ca/2016/SIDE12/index_e.php

July 11–15, 2016
OPSF–S6 Summer School on Orthogonal Polynomials and Special Functions,
Dedicated to the memory and legacy of Frank W. J. Olver,
Norbert Wiener Center for Harmonic Analysis and Applications,
University of Maryland, College Park, Maryland, USA
http://www.norbertwiener.umd.edu/Education/OPSFS6

July 20–22, 2016
The 41st International Symposium on Symbolic and Algebraic Computation (ISSAC) 2016,
Wilfrid Laurier University, Waterloo, Ontario, Canada

August 8–12, 2016
Dunkl operators, special functions and harmonic analysis,
Universität Paderborn, Paderborn, Germany

June 26–30, 2017
OPSF–S7 Summer School on Orthogonal Polynomials and Special Functions,
University of Kent, Canterbury, UK
http://www.kent.ac.uk/smsas/personal/opsfa

July 3–7, 2017
14th International Symposium on Orthogonal Polynomials, Special Functions and Applications (OPSF14),
University of Kent, Canterbury, UK
http://www.kent.ac.uk/smsas/personal/opsfa

July 10–19, 2017
Foundations of Computational Mathematics,
Barcelona, Spain
http://focm–society.org
This is the first newsletter of the New Year 2016 and I’d like to use this opportunity to wish everyone the best for 2016, with many new and interesting research results, new insights in special functions and a very orthogonal polynomial experience. I just had a look at the membership directory and we now have 185 members in the OPSF activity group. This is the highest this century and I am quite happy with that. The OPSFA–13 conference was one of the highlights in 2015 and you still have the opportunity to submit a paper to the special OPSF special issue of SIGMA (deadline is 31 January). In the mean time, preparations for two summer schools and for the next OPSFA–14 meeting are very well in motion. This issue of the newsletter already has some details of the OPSF–S6 summer school at the Norbert Wiener Center for Harmonic Analysis and Applications of the University of Maryland (July 11–15, 2016). Next year there will another summer school OPSF–S7 preceding the OPSFA–14 conference at the University of Kent, UK. Many other conferences and workshops are announced in the Calendar of Events, so that gives many opportunities for members of the activity group to meet and interact. I always liked this aspect of research: interacting with people and interchanging ideas.

I’m looking forward to see many of you this year, and I am travelling around a lot to increase the probability of this event.

At the 2016 Joint Mathematics Meetings in Seattle, WA on January 7, 2016

- Christoph Koutschan (Austrian Academy of Sciences)
- Manuel Kauers (Johannes Kepler University, Linz, Austria)
- Doron Zeilberger (Rutgers University)

received the 2016 AMS David P. Robbins Prize.

The three are honored for their paper, “Proof of George Andrews’s and David Robbins’s $q$–TSPP conjecture,” Proceedings of the National Academy of Sciences (USA) 108, 6, pp. 2196–2199 (2011) which is available on Koutschan’s website. More details are available here and in the Prizes and Awards booklet.
If you are a graduate student, postdoc, or early career researcher, you might be interested in attending the OPSF-S6 Summer School, July 11–15, 2016, at the Norbert Wiener Center for Harmonic Analysis and Applications, University of Maryland, College Park, Maryland, USA. There will be funding available for attendees, so please express your interest in attending by sending e-mail with the following information to opsf@math.umd.edu:

- your name;
- your affiliation; and
- a description of the degrees you have obtained with dates.

A summary of the OPSF-S6 Summer School lectures is as follows.

**Exceptional Orthogonal Polynomials** by Antonio Durán,

Departamento de Análisis Matemático, Universidad de Sevilla, Sevilla, Spain

We will consider the two more important extensions of the classical and classical discrete orthogonal polynomials. Namely: Krall or bispectral polynomials which, besides the orthogonality, are also common eigenfunctions of higher order differential or difference operators; and exceptional polynomials which have recently appeared in connection with quantum mechanic models associated to certain rational perturbations of the classical potentials. We also explore the relationship between both extensions and how they can be used to expand Askey tableau.

**Theory and Applications of \( q \)-Series** by Mourad Ismail,

Department of Mathematics, University of Central Florida, Orlando, Florida, USA.

We develop the theory of \( q \)-series based on \( q \)-Taylor Analysis. This will take us through the Sears and Watson transformations. We will also cover \( q \)-orthogonal polynomials and biorthogonal rational functions. As applications we will derive the Rogers–Ramanujan identities and some of their generalizations.

**Spectral Theory and Special Functions** by Erik Koelink,

Department of Mathematics, Radboud Universiteit Nijmegen, The Netherlands

Many special functions are eigenfunctions to explicit operators, such as difference and differential operators. The study of the spectral properties of such operators leads to explicit information for the corresponding special functions. One of the best known cases is the proof of Favard’s theorem for orthogonal polynomials, and we start with this case. This approach will then be extended to other situations.

**Elliptic Hypergeometric Functions** by Hjalmar Rosengren,

Chalmers University of Technology and University of Gothenburg, Göteborg, Sweden

Elliptic hypergeometric functions are a relatively recent class of special functions. Although some examples can be found in the physics literature from the 1980’s, their mathematical theory has only been developed during the last twenty years. We will give an introduction to elliptic hypergeometric series and integrals and discuss some relations to other topics such as solvable lattice models.
Orthogonal Polynomials and Combinatorics by Jiang Zeng,
Institut Camille Jordan Université Claude Bernard Lyon–I, Villeurbanne, Lyon, France

We present the interplay between orthogonal polynomials and combinatorics by studying combinatorial aspects of the polynomials themselves and their moments. The six lectures will be roughly divided as follows: 1. Basic enumerative combinatorics; 2. Classical orthogonal polynomials as enumerative polynomials; 3. Flajolet–Viennot’s theory of general orthogonal polynomials (I); 4. Flajolet–Viennot’s theory of general orthogonal polynomials (II); 5. Moments of $q$–orthogonal polynomials; and 6. Linearization coefficients of $q$–orthogonal polynomials.

Topic #4  OP – SF Net 23.1  January 15, 2016

From: Paco Marcellán (pacomarc@ing.uc3m.es)
Subject: First announcement/Call for participation: Journées Approximation 2016

5èmes Journées Approximation 2016
Friday May 20, 2016, Université de Lille, France

This is the fifth international meeting organized in Lille on constructive approximation in the complex plane. Various topics will be covered, in particular orthogonal polynomials and rational approximation, low rank tensor approximation in high dimensions, numerical aspects of approximation, asymptotic analysis and Riemann–Hilbert problems, random matrices, quadrature formulas, and others.

Invited speakers:
- Annie Cuyt (University of Antwerp, Belgium)
- Sylvain Chevillard (INRIA Sophia Antipolis, France)
- Tom Claeys (Université Catholique de Louvain, Belgium)
- Albert Cohen (Université Paris VI, France)
- Stefano de Marchi (University of Padova, Italy)
- Dries Stivigny (Katholieke Universiteit Leuven, Belgium)
- Alfredo Deaño (University of Kent, England)
- Antonio Durán (Universidad de Sevilla, Spain)

There will also be a poster session. We kindly invite you to submit an abstract.

Deadlines:
Abstract submission: March 31, 2016
Online registration: March 31, 2016

Organizers:
Ana C. Matos (Université de Lille)
Abderrahman Bouhamidi (Université du Littoral)
Karl Deckers (Université de Lille)
Bernd Beckermann (Université de Lille)

We are looking forward to meeting you in Lille in May 2016.
For more information, see http://math.univ-lille1.fr/~bbecker/ja2016.
On the occasion of Charles F. Dunkl’s 75th birthday, there will be a conference in Paderborn, Germany, August 8–12, 2016, on:

**Dunkl Operators, Special Functions and Harmonic Analysis**

Organizing committee:
Mourad Ismail, Tom Koornwinder, Eric Opdam, Margit Rösler, Michael Voit.

The focus of the conference will be on current developments in harmonic analysis, representation theory and special functions related to Dunkl operator techniques. Topics in particular include harmonic analysis and special functions associated with root systems, representation theory of affine Hecke algebras, as well as applications in probability and mathematical physics such as Dunkl processes, integrable systems. The conference will also feature a broader range of related topics including harmonic analysis on symmetric spaces and hypergroups, orthogonal polynomials and special functions.

Confirmed invited speakers:

- Bechir Amri (Tunis)
- Sergio Andraus (Tokyo)
- Jean–Philippe Anker (Orléans)
- Yuri Berest (Cornell)
- Fethi Bouzaffour (Riyadh)
- Misha Feigin (Glasgow)
- Peter Forrester (Melbourne)
- Leonard Gallardo (Tours)
- Vincent Genest (MIT)
- Iain Gordon (Edinburgh)
- Stephen Griffeth (Talca)
- Joachim Hilgert (Paderborn)
- Rupert Lasser (Munich)
- Hiroshi Oda (Tokyo)
- Bent Orsted (Aarhus)
- Siddhartha Sahi (Rutgers)
- Fabio Scarabotti (Rome)
- Dennis Stanton (Minnesota)
- Jasper Stokman (Amsterdam)
- Sundaram Thangavelu (Bangalore)
- Monica Vazirani (UC Davis)
- Luc Vinet (Montréal)
- Yuan Xu (Oregon)
- Ruiming Zhang (Yangling)

You are welcome to participate in this conference!

Registration is open on the Conference homepage:

**Deadline for registration:** May 15, 2016.

In addition to the invited talks, there will be contributed talks of 25 minutes duration. If you are interested to give a contributed talk, please indicate this on the registration form. There is a separate submission form for abstracts on the Conference homepage.

**Deadline for submission of abstracts:** is also May 15, 2016.

The conference website will be regularly updated. In particular, we shall soon add some recommendations for accommodation.

We are looking forward to seeing you in Paderborn!
The Society for Industrial and Applied Mathematics has announced the publication of the book *Riemann-Hilbert Problems, Their Numerical Solution, and the Computation of Nonlinear Special Functions* by Thomas Trogdon and Sheehan Olver. The following description can be found here.

Riemann–Hilbert problems are fundamental objects of study within complex analysis. Many problems in differential equations and integrable systems, probability and random matrix theory, and asymptotic analysis can be solved by reformulation as a Riemann–Hilbert problem.

This book, the most comprehensive one to date on the applied and computational theory of Riemann–Hilbert problems, includes

- an introduction to computational complex analysis,
- an introduction to the applied theory of Riemann–Hilbert problems from an analytical and numerical perspective,
- a discussion of applications to integrable systems, differential equations, and special function theory, and
- six fundamental examples and five more sophisticated examples of the analytical and numerical Riemann–Hilbert method, each of mathematical or physical significance or both.

**Audience.** This book is intended for graduate students and researchers interested in a computational or analytical introduction to the Riemann–Hilbert method.

Thomas Trogdon is currently an NSF Postdoctoral Fellow at the Courant Institute of Mathematical Sciences at New York University. Sheehan Olver is currently a Senior Lecturer in the School of Mathematics and Statistics at The University of Sydney.
SANUM has a long standing tradition as an event in the scientific life in South Africa. Following in this tradition, the scope of SANUM 2016 includes, but is not limited to, the following topics:

- Ordinary differential equations, modelling, associated numerical analysis
- Partial differential equations, modelling, associated numerical analysis
- Numerical Analysis
- Biomathematics
- Image analysis
- Optimization
- Approximation theory

Special sessions:

- Orthogonal Polynomials, Special Functions, and Applications
- Machine Learning and Computer Vision
- Modelling ecological and evolutionary dynamics

Plenary speakers:

- Mapundi Banda (University of Pretoria, South Africa)
- Folkmar Bornemann (Technische Universität München)
- Nick Higham (University of Manchester, UK)
- Elizabeth Mansfield (University of Kent, UK)
- Beatrice Pelloni (University of Reading, UK)
- Daya Reddy (University of Cape Town, South Africa)
- Nick Trefethen (University of Oxford, UK)
- Walter Van Assche (Katholieke Universiteit Leuven, Belgium)

Deadlines:

- Early bird registration: February 14, 2016
- Abstract submission: Deadline March 1, 2016

Organizing Committee:

- Nick Hale, Ben Herbst, André Weidemann

Further details can be found at [http://sanum.github.io](http://sanum.github.io).

Email enquiries should be sent directly to sanum2016@gmail.com.


From: Xiang–Sheng Wang (xswang@semo.edu)

Subject: Report on JMM AMS Special Session on Recent Advances in OPSF

The AMS Special Session on Recent Advances in Orthogonal Polynomials and Special Functions was held January 9, 2016 during the Joint Mathematics Meeting in Seattle, Washington. There were 10 speakers from Australia, Hong Kong, and the United States of America. The speakers and their talk titles were: **George Andrews**: A refinement of the Alladi–Schur theorem; **Richard Beals**: Understanding Meijer $G$–functions; **Bruce Berndt**: Some integrals of S. Ramanujan and S. Chowla; **Dan Dai**: Uniform asymptotics of orthogonal polynomials arising from coherent states; **Mourad Ismail**: Classes of bivariate orthogonal polynomials;
Ian Marquette: Ladder operators for rationally-extended potentials connected with exceptional orthogonal polynomials and superintegrability; Daniel Parry: Asymptotic estimation of the Andrews–Zagier function and its connection to the Wright’s generalized hypergeometric function; Xiang–Sheng Wang: Asymptotic analysis of difference equations; Roderick Wong: Asymptotics of Racah polynomials; and Xiaoju Xie: Expected number of real zeros of random orthogonal polynomials.


From: OP–SF Net Editors
Subject: Preprints in arXiv.org

The following preprints related to the fields of orthogonal polynomials and special functions were posted or cross–listed to one of the subcategories of arXiv.org during November and December 2015.

http://arxiv.org/abs/1511.00020
A quadratic hypergeometric $\pFq21$ transformation over finite fields
Ron Evans, John Greene

http://arxiv.org/abs/1511.00027
Hypergeometric foundations of Fokker–Plank like equations
A. Plastino, M. C. Rocca

http://arxiv.org/abs/1511.00166
Extension of Chebfun to periodic functions
Grady B. Wright, Mohsin Javed, Hadrien Montanelli, Lloyd N. Trefethen

http://arxiv.org/abs/1511.00198
Multiple–correction and summation of the rational series
Xiaodong Cao, Cristinel Mortici

http://arxiv.org/abs/1511.00291
Fast Engset computation
Parsiad Azimzadeh, Tommy Carpenter

http://arxiv.org/abs/1511.00302
Simple error bounds for the multivariate Laplace approximation
Parsiad Azimzadeh, Tommy Carpenter Piotr Majerski

http://arxiv.org/abs/1511.00484
Closed analytical solutions of the $d$–dimensional Schrödinger equation with deformed Woods–Saxon potential plus double ring–shaped potential
M.Chabab, A. El Batoul, M. Oulne

http://arxiv.org/abs/1511.00795
The largest eigenvalue distribution of the Laguerre unitary ensemble
Shulin Lyu, Yan Chen

http://arxiv.org/abs/1511.00834
Confluence of singularities in hypergeometric systems
Martin Klimes

http://arxiv.org/abs/1511.01608
Flat structure on the space of isomonodromic deformations
Mitsuo Kato, Toshiyuki Mano, Jiro Sekiguchi

http://arxiv.org/abs/1511.01777
On a discretization of confocal quadrics
Alexander I. Bobenko, Yuri B. Suris, Jan Techter

http://arxiv.org/abs/1511.01967
Diagonalization of the Finite Hilbert Transform on two adjacent intervals
Alexander Katsevich, Alexander Tovbis

http://arxiv.org/abs/1511.01992
Connection between quantum systems involving the fourth Painlevé transcendent and $k$-step rational extensions of the harmonic oscillator related to Hermite EOP
Ian Marquette, Christiane Quesne

http://arxiv.org/abs/1511.02099
Approximate formulas for moderately small eikonal amplitudes
A.V. Kisselev

http://arxiv.org/abs/1511.02111
Plane lattice walks avoiding a quadrant
Mireille Bousquet–Mélou

http://arxiv.org/abs/1511.02146
Heat Traces and Spectral Zeta Functions for $p$-adic Laplacians
L. F. Chacón–Cortés, W. A. Zúñiga–Galindo

http://arxiv.org/abs/1511.02165
Semilinear equations associated with Dunkl Laplacian
Mohamed Ben Chrouda, Khalifa El Mabrouk, Kods Hassine

http://arxiv.org/abs/1511.02177
The $\mathbb{Z}^n_2$ Dirac–Dunkl operator and a higher rank Bannai–Ito algebra
Hendrik De Bie, Vincent X. Genest, Luc Vinet

http://arxiv.org/abs/1511.02339
Markov chain order estimation with parametric significance tests of conditional mutual information
Maria Papapetrou, Dimitris Kugiumtzis

http://arxiv.org/abs/1511.02422
The Stern diatomic sequence via generalized Chebyshev polynomials
Valerio De Angelis

http://arxiv.org/abs/1511.02523
Partial Radon Transform and Hamburger moment completion in $\mathbb{R}^2$
Hayoung Choi, Farhad Jafari
To the Hilbert class field from the hypergeometric modular function
AtsuHIRa Nagano, Hironori Shiga

Asymptotics of the convolution of the Airy function and a function of the power–like behavior
Sergei V. Zakharov

Generalized Hermite–Hadamard–Fejer type inequalities for GA–convex functions via Fractional integral
İmdat İşcan, Sercan Turhan

On the $b$–functions of hypergeometric systems
Thomas Reichelt, Christian Sevenheck, Uli Walther

Linear collective collocation and Galerkin methods for parametric and stochastic elliptic PDEs
Dinh Dũng

Dynamics of Chebyshev polynomials on $\mathbb{Z}_2$
Shilei Fan, Lingmin Liao

A Feynman Integral and its Recurrences and Associators
Georg PuhlFuerst, Stephan Stieberger

Invariance of the generalized oscillator under linear transformation of the related system of orthogonal polynomials
V.V. Borzov, E.V. Damaskinsky

Evaluations of certain theta functions in Ramanujan theory of alternative modular bases
N.D. Bagis

Algebraic approach to slice monogenic functions
LandEr Cnudde, Hendrik De Bie, Guangbin Ren

Separation of zeros and a Hermite interpolation based frame algorithm for band limited functions
Antony Selvan, R. Radha

Generalized Goncarov polynomials
Rudolph Lorentz, Salvatore Tringali, Catherine H. Yan

http://arxiv.org/abs/1511.04125
Symmetric matrices, Catalan paths, and correlations
Bernd Sturmfels, Emmanuel Tsukerman, Lauren Williams

http://arxiv.org/abs/1511.04248
Computing Jacobi’s θ in quasi-linear time
Hugo Labrande

http://arxiv.org/abs/1511.04293
Searching for Disjoint Covering Systems with Precisely One Repeated Modulus
Shalosh B. Ekhad, Aviezri S. Fraenkel, Doron Zeilberger

http://arxiv.org/abs/1511.04375
On the zeta functions on the projective complex spaces
Mounir Hajli

http://arxiv.org/abs/1511.04564
Multivariate polynomial interpolation on Lissajous–Chebyshev nodes
Peter Dencker, Wolfgang Erb

http://arxiv.org/abs/1511.04603
On relations equivalent to the generalized Riemann hypothesis for the Selberg class
Kamel Mazhouda, Lejla Smajlović

http://arxiv.org/abs/1511.04648
Superconvergence of Immersed Finite Element Methods for Interface Problems
Waixiang Cao, Xu Zhang, Zhimin Zhang

http://arxiv.org/abs/1511.04720
On some series formed by values of the Riemann Zeta function
Claude Henri Picard

http://arxiv.org/abs/1511.04771
Christoffel transformations for matrix orthogonal polynomials in the real line and the non-Abelian 2D Toda lattice hierarchy
Carlos Álvarez–Fernández, Gerardo Ariznabarreta, Juan Carlos García–Ardila, Manuel Mañas, Francisco Marcellán

http://arxiv.org/abs/1511.05083
A Symmetric System of Mixed Painlevé III – V Equations and its Integrable Origin
H. Aratyn, J. F. Gomes, D. V. Ruy, A. H. Zimerman

http://arxiv.org/abs/1511.05215
The para–Racah polynomials
Jean–Michel Lemay, Luc Vinet, Alexei Zhedanov

http://arxiv.org/abs/1511.05281
On Hermite–Hadamard Type Inequalities Via h–Convexity with Applications in Special Means
Muhammad Iqbal, Muhammad Muddassar, Muhammad Iqbal Bhatti
The Pearcey integral in the highly oscillatory region
Jose L. Lopez, Pedro Pagola

How many Zolotarev fractions are there?
Andrei Bogatyrev

Continued Classification of 3D Lattice Walks in the Positive Octant
Axel Bacher, Manuel Kauers, Rika Yatchak

A First Szegő's Limit Theorem for a class of non-Toeplitz matrices
A. Bourget, T.K. McMillen

Moments of hypergeometric weights
Diego Dominici

New Expressions for Ergodic Capacities of Optical Fibers and Wireless MIMO Channels
Amor Nafkha, Nizar Demni, Remi Bonnefoi

Bounds for the product of modified Bessel functions
Árpád Baricz, Dragana Jankov Maširević, Saminathan Ponnusamy, Sanjeev Singh

On pro-isomorphic zeta functions of $D^*$--groups of even Hirsch length
Mark N. Berman, Benjamin Klopsch, Uri Onn

Some new facts around the delta neutral $H$ function of Fox
D. Karp, E. Prilepkina

On Hermite–Hadamard–Fejer Inequality type for Convex Functions via Fractional Integrals
Abdullah Akkurt, Hüseyin Yıldırım

A Dunkl generalization of $q$--parametric Szasz–Mirakjan operators
M. Mursaleen, Md. Nasiruzzaman

Potential theory associated with the Dunkl Laplacian
Kods Hassine

Orthogonality measure on the torus for vector–valued Jack polynomials
Charles F. Dunkl
Computerizing the Andrews–Fraenkel–Sellers Proofs on the Number of \(m\)-ary partitions \(\text{mod } m\) (and doing MUCH more!)
Shalosh B. Ekhad, Doron Zeilberger

Simultaneous distribution of fractional parts of Riemann zeta zeros
Kevin Ford, Xianchang Meng, Alexandru Zaharescu

Zero–density estimates for Epstein zeta functions
Steven Gonek, Yoonbok Lee

Positive or sign–changing solutions for a critical semilinear nonlocal equation
Wei Long, Jing Yang

A census of zeta functions of quartic K3 surfaces over \(\mathbb{F}_2\)
Kiran S. Kedlaya, Andrew V. Sutherland

Orthogonal polynomials on the unit ball and fourth order partial differential equations
Clotilde Martínez, Miguel A. Piñar

Logarithmically completely monotontic functions related the \(q\)–gamma and the \(q\)–digamma functions with applications
Khaled Mehrez

A family of class–2 nilpotent groups, their automorphisms and pro–isomorphic zeta functions
Mark N. Berman, Benjamin Klopsch, Uri Onn

Multidimensional Toda lattices: continuous and discrete time
Alexander I. Aptekarev, Maxim Derevyagin, Hiroshi Miki, Walter Van Assche

The Lerch zeta function IV. Hecke operators
Jeffrey C. Lagarias, Wen–Ching Winnie Li

The Lerch zeta function and the Heisenberg group
Jeffrey C. Lagarias

Complete monotonicity and bernstein properties of functions are characterized by their restriction on \(\mathbb{N}_0\)
Rafik Aguech, Wissem Jedidi
http://arxiv.org/abs/1511.08613
Integrable open spin chains related to infinite matrix product states
Bireshwar Basu-Mallick, Federico Finkel, Artemio Gonzalez-Lopez

http://arxiv.org/abs/1511.08656
Equivariant motivic integration on formal schemes and the motivic zeta function
Annabelle Hartmann

http://arxiv.org/abs/1511.08750
Universality of the mean number of real zeros of random trigonometric polynomials under a weak Cramer condition
Jürgen Angst, Guillaume Poly

http://arxiv.org/abs/1511.09102
Turán type inequalities for the $q$-exponential functions
Khaled Mehrez

http://arxiv.org/abs/1511.09129
Linear spectral transformations for multivariate orthogonal polynomials and multispectral Toda hierarchies
Gerardo Ariznabarreta, Manuel Mañas

http://arxiv.org/abs/1511.09155
A superintegrable discrete harmonic oscillator based on bivariate Charlier polynomials
Vincent X. Genest, Hiroshi Miki, Luc Vinet, Guofu Yu

http://arxiv.org/abs/1511.09175
Do orthogonal polynomials dream of symmetric curves?
A. Martinez-Finkelshtein, E. A. Rakhmanov

http://arxiv.org/abs/1511.09192
Counting Points on Dwork Hypersurfaces and $p$-adic Gamma Function
Rupam Barman, Hasanur Rahman, Neelam Saikia

http://arxiv.org/abs/1511.09217
On the asymptotic expansions of products related to the Wallis, Weierstrass and Wilf formulas
C.-P. Chen, R.B. Paris

http://arxiv.org/abs/1511.09266
Height zeta functions of projective bundles
Takuya Maruyama

http://arxiv.org/abs/1511.09410
Hard edge limit of the product of two strongly coupled random matrices
Gernot Akemann, Eugene Strahov

http://arxiv.org/abs/1512.00106
An application of hypergeometric shift operators to the chi–spherical Fourier transform
Vivian M. Ho, G. Olafsson
http://arxiv.org/abs/1512.00129
Pretzel Knots and $q$-Series
Mohamed Elhamdadi, Mustafa Hajij

http://arxiv.org/abs/1512.00234
Real zeros of Hurwitz–Lerch zeta functions in the interval $(-1, 0)$
Takashi Nakamura

http://arxiv.org/abs/1512.00329
The Asymptotic Distribution of Symbols on Diagonals of Random Weighted Staircase Tableaux
Amanda Lohss

http://arxiv.org/abs/1512.00918
Shifted moments of L–functions and moments of theta functions
Marc Munsch

http://arxiv.org/abs/1512.01064
Sobolev orthogonal polynomials on the unit ball via outward normal derivatives
Antonia M. Delgado, Lidia Fernández, Doron Lubinsky, Teresa E. Pérez, Miguel A. Piñar

http://arxiv.org/abs/1512.01121
New identities for finite sums of products of generalized hypergeometric functions
Runhuan Feng, Alexey Kuznetsov, Fenghao Yang

http://arxiv.org/abs/1512.01379
Discrete harmonic analysis associated with ultraspherical expansions
Jorge J. Betancor, Alejandro J. Castro, Juan C. Fariña, Lourdes Rodríguez–Mesa

http://arxiv.org/abs/1512.01466
Trigonometric representations of generalized Dedekind and Hardy sums via the discrete Fourier transform
Michael Th. Rassias, László Tóth

http://arxiv.org/abs/1512.01686
Numerical solution for fractional variational problems using the Jacobi polynomials
Hassan Khosravian–Arab, Ricardo Almeida

http://arxiv.org/abs/1512.01710
Cubature formulas of multivariate polynomials arising from symmetric orbit functions
Jiří Hrivnák, Lenka Motlochová, Jiří Patera

http://arxiv.org/abs/1512.01720
Elliptic rook and file numbers
Michael J. Schlosser, Meesue Yoo

http://arxiv.org/abs/1512.01928
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This is a convenient point of entry to all the services provided by the Group. Our Webmaster is Bonita Saunders (bonita.saunders@nist.gov).

The Activity Group sponsors OP–SF NET, an electronic newsletter, and SIAM–OPSF (OP–SF Talk), a listserv, as a free public service; membership in SIAM is not required. OP–SF
NET is transmitted periodically through a post to OP–SF Talk. The OP–SF Net Editors are Howard Cohl (howard.cohl@nist.gov) and Kerstin Jordaan (kerstin.jordaan@up.ac.za).

Back issues of OP–SF NET can be obtained at the websites: https://staff.fnwi.uva.nl/t.h.koornwinder/opsfnet http://math.nist.gov/~DLozier/OPSfnet

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From: OP–SF Net Editors
Subject: Submitting contributions to OP–SF NET and SIAM–OPSF (OP–SF Talk)

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- Walter Van Assche, Chair
- Jeff Geronimo, Vice Chair
- Diego Dominici, Program Director
- Yuan Xu, Secretary

The appointed officers are:
- Howard Cohl, OP–SF NET co-editor
- Kerstin Jordaan, OP–SF NET co-editor
- Diego Dominici, OP–SF Talk moderator
- Bonita Saunders, Webmaster and OP–SF Talk moderator

Thought of the month

“The elegance of a mathematical theorem is directly proportional to the number of independent ideas one can see in the theorem and inversely proportional to the efforts it takes to see them.”

George Pólya, *Mathematical Discovery: On Understanding, Learning, and Teaching Problem Solving*