

OP-SF NET – Volume 23, Number 3 – May 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
2. Call for nominations for the Gábor Szegő Prize
3. V CLAM thematic session on OPSF and approximation theory
4. “Orthogonal Polynomials and Applications” minisymposium at the 7ECM, Berlin
5. Announcement: Random matrix theory: perspectives and applications
6. SIAM minisymposium on Computational Aspects of Special Functions
7. DLMF updates are being planned
8. Preprints in arXiv.org
9. About the Activity Group
10. Submitting contributions to OP-SF NET and SIAM-OPSF (OP-SF Talk)

Calendar of Events:

May 20, 2016

5^{èmes} Journées Approximation 2016,
International Conference on Constructive Complex Approximation
Laboratoire Paul Painlevé, Université de Lille, France
<http://math.univ-lille1.fr/~bbecker/ja2016>

June 5–10, 2016

XII international Conference on Approximation and Optimization
Havana University, Cuba
<http://gama.uc3m.es/appopt>

June 6–8, 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 11–17, 2016

Constructive Theory of Functions
Sozopol, Bulgaria
<http://www.math.bas.bg/mathmod/CTF-2016>

June 14–18, 2016

Integrable Systems and Quantum Symmetries
Czech Technical University in Prague, Prague, Czech Republic
<http://www.intsystems.cz>

June 23–28, 2016

9th International Conference on Mathematical Methods for Curves and Surfaces
Tønsberg, Norway
<http://www.mn.uio.no/MMCS9>

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/2016/ASIDE16/index_e.php

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 3–8, 2016

VII Jaén Conference on Approximation Theory,
Úbeda, Jaén, Spain
<http://www.ujaen.es/revista/jja/jca/index.php>

July 11–15, 2016

[V Latin American Congress of Mathematicians](#),
Thematic session on “Special functions, orthogonal polynomials and approximation theory”
Universidad del Norte, Barranquilla, Colombia
<http://www.uninorte.edu.co/web/vclam/ana6>

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 14, 2016

Minisymposium on “Computational Aspects of Special Functions”,
2016 SIAM Annual Meeting,
Boston, Massachusetts, USA
http://meetings.siam.org/sess/dsp_programsess.cfm?SESSIONCODE=23333

July 18–22, 2016

Minisymposium on “Orthogonal Polynomials and Applications”,
7th European Congress of Mathematics,
Technische Universität Berlin, Berlin, Germany
<http://www.7ecm.de>

July 20–22, 2016

The 41st International Symposium on Symbolic and Algebraic Computation 2016,
Wilfrid Laurier University, Waterloo, Ontario, Canada
<http://www.issac-conference.org/2016>

August 8–12, 2016

Dunkl operators, special functions and harmonic analysis,
Universität Paderborn, Paderborn, Germany
<https://math.uni-paderborn.de/arbeitsgruppen/arbeitsgruppe-harmonische-analyse/dunkl2016>

August 22–26, 2016

Conference on Methods of Modern Mathematical Physics,
A Young Researcher Symposium on the Occasion of the 70th Birthday of Barry Simon,
Fields Institute, Toronto, Canada
<http://www.fields.utoronto.ca/programs/scientific/16-17/modern-physics>

August 28–September 1, 2016

Frontiers in Mathematical Physics,
A Conference on the Occasion of Barry Simon’s 70th Birthday,
CRM, Montreal, Canada
http://www.crm.umontreal.ca/2016/Simon16/index_e.php

September 13, 2016

Random Matrix Theory: perspectives and applications
School of Mathematics, Statistics & Actuarial Science, University of Kent, Canterbury, UK
<https://www.kent.ac.uk/smsas/events/matrix-theory.html>

September 8–13, 2016

4th Dolomites Workshop on Constructive Approximation and Applications (DWCAA16)
Dedicated to Annie Cuyt in the occasion of her 60th birthday
Alba di Canazei, Trento, Italy
<http://events.math.unipd.it/dwcaa16>

November 28–December 02, 2016

International Conference on Mathematical Analysis and its Applications 2016,
Department of Mathematics, Indian Institute of Technology Roorkee, Roorkee, India
<http://www.iitr.ac.in/icmaa/2016/index.html>

June 26–33, 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 (OPSFA14), University of Kent, Canterbury, UK
<http://www.kent.ac.uk/smsas/personal/opsfa>

July 10–15, 2017

Computational Methods and Function Theory,
Maria Curie–Skłodowska University, Lublin, Poland
<http://www.cmft2017.umcs.lublin.pl/index.html>

July 10–19, 2017

Foundations of Computational Mathematics,
Barcelona, Spain
<http://www.ub.edu/focm2017/index.html>

Topic #1 ——— OP – SF Net 23.3 ——— May 15, 2016

From: Walter Van Assche (Walter.VanAssche@wis.kuleuven.be)
Subject: Message from the Chair

This newsletter is the result of the efforts of our two appointed editors Kerstin Jordaan and Howard Cohl, who took over the job of Martin Muldoon and Diego Dominici since March 2015. At the end of 2015, Kerstin Jordaan was elected to be the new president of the [South African Mathematical Society](#) (SAMS). Congratulations to Kerstin and good luck running SAMS. As a result, Kerstin decided to step down as co–editor of OPSF–Net by the end of this year. Howard Cohl will continue to serve as co–editor.



Our search for a new co–editor successfully resulted with Sarah Post accepting to take on the task. Sarah Post is assistant professor at the Department of Mathematics of the University of Hawai’i at Mānoa in Honolulu. She was one of the plenary speakers at the latest OPSFA–13 meeting in Gaithersburg (June 2015) where she gave a talk on Limits of Orthogonal Polynomials and Contractions of Lie Algebras. Sarah obtained her PhD in Mathematics from the University of Minnesota in July 2009 and her supervisor was Willard Miller Jr.

I welcome Sarah to the activity group Orthogonal Polynomial and Special Functions and hope she will enjoy working on OPSF–Net as much as we enjoy reading every issue. Personally I hope I finally found an excuse to visit Hawaii.

Topic #2 ——— OP – SF Net 23.3 ——— May 15, 2016

From: Walter Van Assche (Walter.VanAssche@wis.kuleuven.be)
Subject: Call for nominations for the Gábor Szegő Prize

Call for nominations for the Gábor Szegő Prize (opens May 1, 2016 and closes October 15, 2016)

The SIAM Activity Group on Orthogonal Polynomials and Special Functions (SIAG/OPSF) awards the Gábor Szegő Prize every two years to an early-career researcher for outstanding research contributions, as determined by the prize committee, in the area of orthogonal polynomials and special functions. The contributions must be contained in a paper or papers published in English in peer-reviewed journals. This prize is intended for an early career researcher. The prize can only be awarded to a researcher who has at most 10 years (full time equivalent) of involvement in mathematics since PhD at the award date, allowing for breaks in continuity, or who in the opinion of the prize committee is at an equivalent stage in their career.

A valid nomination requires:

1. a letter of nomination signed by two (2) members of the SIAG; and
2. a curriculum vitae (CV) of the nominee.

Letters of nomination should indicate the paper(s) cited for the work being recognized, explain the significance of the work, and (especially in the case of multiple authors) indicate the contribution of each of the individuals nominated. Please send all required materials to: szego_prize@siam.org, with a copy to the SIAG-OPSF chair walter@wis.kuleuven.be.

The award will consist of a plaque and a certificate containing the citation. As part of the award, the recipient will be invited to give a plenary lecture at the International Symposium on Orthogonal Polynomials, Special Functions, and Applications (OPSFA-14), which will be held at the University of Kent (Canterbury, UK), July 3-7, 2017. Travel funds will be made available to reimburse the recipient for reasonable travel expenses incurred in attending the award ceremony and giving the talk. SIAM will cover expenses for travel to and from the OPSFA conference and the OPSFA conference will waive the conference registrations fee and cover local accommodation costs.

For more information, see

http://www.siam.org/prizes/nominations/nom_siag_szego.php.

Topic #3 ——— OP – SF Net 23.3 ——— May 15, 2016

From: Manuel Domínguez de la Iglesia (mdi29@im.unam.mx)

Subject: V CLAM thematic session on OPSF and approximation theory

The “V Latin American Congress of Mathematicians” will be held in the campus of the Universidad del Norte in the Caribbean city of Barranquilla, Colombia, from July 11-15, 2016:

<http://www.uninorte.edu.co/web/vclam-en/inicio>

There will be a thematic session on “Special functions, orthogonal polynomials and approximation theory”:

<http://www.uninorte.edu.co/web/vclam/ana6>

The organizers are:

- Manuel Domínguez de la Iglesia, Instituto de Matemáticas UNAM, México;
- Herbert Alonso Dueñas, Universidad Nacional de Colombia, Colombia; and
- Luis Enrique Garza, Universidad de Colima, México.

The invited speakers are (confirmed):

- Cleonice Fátima Bracciali, Universidade Estadual Paulista, Brazil;
- Abdón Choque, Universidad Michoacana de San Nicolás de Hidalgo, México;
- Erdal Emsiz, Pontificia Universidad Católica de Chile, Chile;
- Ulises Fidalgo, University of Mississippi, USA;
- Natalia Pinzón Cortés, Universidad Nacional de Colombia, Colombia;
- Pablo Román, Universidad Nacional de Córdoba, Argentina; and
- Alagacone Sri Ranga, Universidade Estadual Paulista, Brazil.

You are welcome to participate in this conference!

Topic #4 ——— OP – SF Net 23.3 ——— May 15, 2016

From: Andrei Martínez–Finkelshtein (andrei@ual.es)

Subject: “Orthogonal Polynomials and Applications” minisymposium at the 7ECM, Berlin

From 18th to 22nd July, 2016, the 7th European Congress of Mathematics (7ECM), that the European Mathematical Society (EMS) organizes every four years, will take place in Berlin, Germany.

A minisymposium, entitled “Orthogonal polynomials and Applications”, has been arranged within this congress, scheduled to take place on July 20th, organized by Alfredo Deaño (University of Kent, United Kingdom), Galina Filipuk (University of Warsaw, Poland), Andrei Martínez–Finkelshtein (University of Almería, Spain), Juan J. Moreno–Balcázar (University of Almería, Spain), Maria das Neves Rebocho (University of Beira Interior, Portugal).

The minisymposium will consist of two sessions, one in the morning and another one in the afternoon. The speakers in the morning session are:

- Jonathan Breuer (Hebrew University of Jerusalem, Israel);
- Ruyman Cruz–Barroso (Universidad de La Laguna, Spain);
- Arno Kuijlaars (KU Leuven, Belgium); and
- Marija Stanić (University of Kragujevac, Serbia).

The speakers in the afternoon session are:

- Yang Chen (University of Macau, Macau);
- Stefan Hilger (Katholische Universität Eichstätt–Ingolstadt, Germany);
- Edmundo J. Huertas (Universidad de Alcalá, Spain);
- Francisco Marcellán (Universidad Carlos III de Madrid, Spain); and
- Walter Van Assche (KU Leuven, Belgium).

More information is available on the 7ECM webpage <http://www.7ecm.de>.

Topic #5 ——— OP – SF Net 23.3 ——— May 15, 2016

From: Alfredo Deaño–Cabrera (A.Deano-Cabrera@kent.ac.uk)

Subject: Announcement: Random matrix theory: perspectives and applications

Random matrix theory: perspectives and applications.

To be held at [SMSAS](#), University of Kent (Canterbury, UK) on September 13, 2016.

This one–day workshop will consist of four talks discussing recent developments and different perspectives of random matrix theory, an extremely active area of research in the last few years that has developed very strong links with other areas of mathematics, such as integrable systems, special functions, asymptotic analysis, probability theory, number theory and combinatorics.

Invited speakers:

- Arno Kuijlaars, [Department of Mathematics](#), University of Leuven (Belgium).
- Tamara Grava, [School of Mathematics](#), University of Bristol (UK), [SISSA](#) (Trieste, Italy).
- Nicholas Simm, [Warwick Mathematics Institute](#), University of Warwick (UK).
- Alfredo Deaño–Cabrera, [SMSAS](#), University of Kent (UK).

Supported by the London Mathematical Society (Celebrating New Appointments, Grant Scheme) and the University of Kent Faculty of Sciences Research Fund.

For more information, visit

<https://www.kent.ac.uk/smsas/events/matrix-theory.html>

or email ad548@kent.ac.uk.

Topic #6 ——— OP – SF Net 23.3 ——— May 15, 2016

From: Javier Segura (javier.segura@unican.es)

Subject: SIAM minisymposium on Computational Aspects of Special Functions

SIAM Annual Meeting minisymposium: [Computational Aspects of Special Functions](#).

The 2016 SIAM Annual Meeting will take place in Boston, USA (July 11–15, 2016). As a part of this conference, a minisymposium on computational aspects of special functions is being organized by Amparo Gil (U. Cantabria, Spain), Javier Segura (U. Cantabria, Spain) and Nico M. Temme (CWI, The Netherlands). The minisymposium will consist of four 25 minute talks in which algorithms and methods for the computation of special functions will be discussed, together with related problems such as the computation of Gaussian quadrature rules and the numerical solution of ordinary differential equations.

List of contributions:

1. Efficient Computation of Gaussian Quadrature Rules. Amparo Gil, Diego Ruiz–Antolin, and Javier Segura, Universidad de Cantabria, Spain, Nico M. Temme, Centrum voor Wiskunde en Informatica (CWI), Netherlands.
2. A Method for the Numerical Computation of Nonoscillatory Phase Functions, James Bremer, University of California, Davis, USA.

3. Ultraspherical Spectral Method and Approximating Special Functions, Sheehan Olver, University of Sydney, Australia.
4. Computing without Spherical Harmonics, Alex Townsend, MIT, USA; Grady B. Wright and Heather D. Wilber, Boise State University, USA.

For more details on this minisymposium,
see http://meetings.siam.org/sess/dsp_programsess.cfm?SESSIONCODE=23333.

For more information on the 2016 SIAM Annual Meeting,
visit <http://www.siam.org/meetings/an16>.

Topic #7 ——— OP – SF Net 23.3 ——— May 15, 2016

From: Barry Schneider (barry.schneider@nist.gov)
Subject: DLMF updates are being planned

The Editors of the NIST [Digital Library of Mathematical Functions](#) have begun to consider how current content can be improved or enlarged. Input from the community is quite welcome as we begin this process. Please send your thoughts to dlmf-feedback@nist.gov.

Topic #8 ——— OP – SF Net 23.3 ——— May 15, 2016

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 March and April 2016.

<http://arxiv.org/abs/1603.00123>

A large class of bound-state solutions of the Schrödinger equation via Laplace transform of the confluent hypergeometric equation
P.H.F. Nogueira, A.S. de Castro, D.R.M. Pimentel

<http://arxiv.org/abs/1603.00196>

Multivariate Krawtchouk polynomials and composition birth and death processes
Robert Griffiths

<http://arxiv.org/abs/1603.00269>

The Sobolev moment problem and Jordan dilations
F.H. Szafraniec, M. Wojtylak

<http://arxiv.org/abs/1603.00689>

On a class of formal power series and their summability
A. Lastra, J. Sanz, J. R. Sendra

<http://arxiv.org/abs/1603.00722>

Integrals of products of Hurwitz zeta functions
M.A. Shpot, M.P. Chaudhary, R. B. Paris

<http://arxiv.org/abs/1603.00863>
Optimization via Chebyshev Polynomials
Kareem T. Elgindy

<http://arxiv.org/abs/1603.00945>
Optimal Barycentric Gegenbauer Quadrature
Kareem T. Elgindy

<http://arxiv.org/abs/1603.01013>
On triple zeta values of even weight and their connections with period polynomials
Ding Ma, Koji Tasaka

<http://arxiv.org/abs/1603.01052>
Spectral analysis of non-self-adjoint Jacobi operator associated with Jacobian elliptic functions
Petr Siegl, František Štampach

<http://arxiv.org/abs/1603.01085>
On Kapteyn–Kummer Series' Integral Form
Tibor K. Pogány, Árpád Baricz, Anikó Szakál

<http://arxiv.org/abs/1603.01306>
Zeros of certain combinations of Eisenstein series
Sarah Reitzes, Polina Vulakh, Matthew P. Young

<http://arxiv.org/abs/1603.01494>
Spectral asymptotics on sequences of elliptically degenerating Riemann surfaces
Daniel Garbin, Jay Jorgenson

<http://arxiv.org/abs/1603.01517>
Optimal Control of a Parabolic Distributed Parameter System Using a Barycentric Shifted Gegenbauer Pseudospectral Method
Kareem T. Elgindy

<http://arxiv.org/abs/1603.01832>
Dunkl harmonic analysis and fundamental sets of functions on the unit sphere
Roman Veprintsev

<http://arxiv.org/abs/1603.01891>
Uniform approximations by Fourier sums on classes of generalized Poisson integrals
A.S. Serdyuk, T.A. Stepaniuk

<http://arxiv.org/abs/1603.01949>
An explicit prime geodesic theorem for discrete tori and the hypergeometric functions
Yoshinori Yamasaki

<http://arxiv.org/abs/1603.01986>
Alpert multiwavelets and Legendre–Angelesco multiple orthogonal polynomials
Jeffrey S. Geronimo, Plamen Iliev, Walter Van Assche

<http://arxiv.org/abs/1603.01989>

The class of Lucas–Lehmer polynomials
Pierluigi Vellucci, Alberto Maria Bersani

<http://arxiv.org/abs/1603.02053>

The Heun operator as Hamiltonian
A.V. Turbiner

<http://arxiv.org/abs/1603.02070>

On Hermite–Hadamard Inequalities for differentiable λ -preinvex functions via Riemann–Liouville Fractional Integrals
Abdullah Akkurt, M. Esra Yildirim, Hüseyin Yildirim

<http://arxiv.org/abs/1603.02236>

Solution of the Wheeler–DeWitt equation and the triconfluent Heun functions
H. S. Vieira, V. B. Bezerra

<http://arxiv.org/abs/1603.02312>

Asymptotic properties of Jacobi matrices for a family of fractal measures
Gökalp Alpan, Alexander Goncharov, Ahmet Nihat Şimşek

<http://arxiv.org/abs/1603.02952>

The Selberg integral and a new pair–correlation function for the zeros of the Riemann zeta–function
Alessandro Zaccagnini

<http://arxiv.org/abs/1603.02954>

Some results on the $\xi(s)$ and $\Xi(t)$ functions associated with Riemann’s $\zeta(s)$ function
Hisashi Kobayashi

<http://arxiv.org/abs/1603.03314>

Zero Distribution of Hermite–Padé Polynomials and Convergence Properties of Hermite Approximants for Multivalued Analytic Functions
Nikolay R. Ikononov, Ralitzka K. Kovacheva, Sergey P. Suetin

<http://arxiv.org/abs/1603.03329>

Improved convergence rates for Lasserre–type hierarchies of upper bounds for box–constrained polynomial optimization
Etienne de Klerk, Roxana Hess, Monique Laurent

<http://arxiv.org/abs/1603.03340>

Thue’s inequalities and the hypergeometric method
Shabnam Akhtari, N. Saradha, Divyum Sharma

<http://arxiv.org/abs/1603.03547>

Two Definite Integrals Involving Products of Four Legendre Functions
Yajun Zhou

<http://arxiv.org/abs/1603.03667>

Riemann’s zeta function and the broadband structure of pure harmonics
Artur Sowa

<http://arxiv.org/abs/1603.03762>

Monotonicity of Zeros of Jacobi–Angelesco polynomials
Eliel J. C. dos Santos

<http://arxiv.org/abs/1603.03913>

Zeta functions interpolating the convolution of the Bernoulli polynomials
Abdelmejid Bayad, Takao Komatsu

<http://arxiv.org/abs/1603.03986>

Differential equations associated with Legendre polynomials
Taekyun Kim, Dae san Kim

<http://arxiv.org/abs/1603.04024>

Extension of Frame’s type inequalities to Bessel and modified Bessel functions
Khaled Mehrez

<http://arxiv.org/abs/1603.04076>

Twisted characteristic p zeta functions
Bruno Anglès, Tuan Ngo Dac, Floric Tavares Ribeiro

<http://arxiv.org/abs/1603.04145>

On analogues of Arakawa–Kaneko zeta functions of Mordell–Tornheim type
Takuma Ito

<http://arxiv.org/abs/1603.04328>

Precise deviations results for the maxima of some determinantal point processes: the upper tail
Peter Eichelsbacher, Thomas Kriecherbauer, Katharina Schüler

<http://arxiv.org/abs/1603.04352>

Overpartitions related to the mock theta function $\omega(q)$
George E. Andrews, Atul Dixit, Daniel Schultz, Ae Ja Yee

<http://arxiv.org/abs/1603.04358>

A Bochner type classification theorem for exceptional orthogonal polynomials
M. Ángeles García–Ferrero, David Gómez–Ullate, Robert Milson

<http://arxiv.org/abs/1603.04658>

Weighted inequalities for fractional integral operators and linear commutators in the Morrey type spaces
Hua Wang

<http://arxiv.org/abs/1603.04694>

Zeros of Ramanujan Type Entire Functions
Ruiming Zhang

<http://arxiv.org/abs/1603.04937>

On the (Filled–) Julia sets of Orthogonal polynomials
Jacob Stordahl Christiansen, Christian Henriksen, Henrik Laurberg Pedersen, Carsten Lunde Petersen

<http://arxiv.org/abs/1603.04974>

A novel approach to the discovery of ternary BBP–type formulas for polylogarithm con–

stants
Kunle Adegoke

<http://arxiv.org/abs/1603.05041>

From Krall discrete orthogonal polynomials to Krall polynomials
Antonio J. Durán

<http://arxiv.org/abs/1603.05173>

SUSY partners of the truncated oscillator, Painlevé transcendents and Bäcklund transformations
David J. Fernández C, VS Morales–Salgado

<http://arxiv.org/abs/1603.05243>

An easy upper bound for Ramsey numbers
Roland Bacher

<http://arxiv.org/abs/1603.05357>

Special functions, integral equations and Riemann–Hilbert problem
R. Wong, Yu–Qiu Zhao

<http://arxiv.org/abs/1603.05512>

On Certain Positive Semidefinite Matrices of Special Functions
Ruiming Zhang

<http://arxiv.org/abs/1603.05697>

A lower bound for the Θ function on manifolds without conjugate points
Yannick Bonthonneau

<http://arxiv.org/abs/1603.05773>

A framework for structured linearizations of matrix polynomials in various bases
Leonardo Robol, Raf Vandebril, Paul Van Dooren

<http://arxiv.org/abs/1603.05786>

Shuffle product formulas of multiple zeta values
Zhonghua Li, Chen Qin

<http://arxiv.org/abs/1603.05810>

A novel approach to the discovery of binary BBP–type formulas for polylogarithm constants
Kunle Adegoke

<http://arxiv.org/abs/1603.05811>

Finite and étale polylogarithms
Kenji Sakugawa, Shin–ichiro Seki

<http://arxiv.org/abs/1603.05815>

Minkowski’s Question Mark Measure
Giorgio Mantica

<http://arxiv.org/abs/1603.05948>

Evaluating Generating Functions for Periodic Multiple Polylogarithms
Kurusch Ebrahimi–Fard, W. Steven Gray, Dominique Manchon

<http://arxiv.org/abs/1603.06011>

Random Matrix Theory and Quantum Chromodynamics
Gernot Akemann

<http://arxiv.org/abs/1603.06069>

Simultaneous Gaussian quadrature for Angelesco systems
Doron S. Lubinsky, Walter Van Assche

<http://arxiv.org/abs/1603.06101>

Noncommutative extensions of elliptic integrable Euler–Arnold tops and Painlevé VI equation
A. Levin, M. Olshanetsky, A. Zotov

<http://arxiv.org/abs/1603.06420>

The Kontsevich matrix integral: convergence to the Painlevé hierarchy and Stokes’ phenomenon
Marco Bertola, Mattia Cafasso

<http://arxiv.org/abs/1603.06511>

Spectral Methods for Tempered Fractional Differential Equations
Lijing Zhao, Weihua Deng, Jan S Hesthaven

<http://arxiv.org/abs/1603.06622>

A geometry where everything is better than nice
Larry Bates, Peter Gibson

<http://arxiv.org/abs/1603.06657>

Summation formulae for the bilateral basic hypergeometric series ${}_1\psi_1(a; b; q, z)$
Hironori Mori, Takeshi Morita

<http://arxiv.org/abs/1603.06893>

Moments of zeta and correlations of divisor–sums: IV
Brian Conrey, Jonathan P. Keating

<http://arxiv.org/abs/1603.06992>

The complex Airy operator with a semi–permeable barrier
D. S. Grebenkov, B. Helffer, R. Henry

<http://arxiv.org/abs/1603.07023>

Sums of squares of Krawtchouk polynomials, Catalan numbers, and some algebras over the Boolean lattice
Philip Feinsilver

<http://arxiv.org/abs/1603.07079>

Ramanujan and coefficients of meromorphic modular forms
Kathrin Bringmann, Ben Kane

<http://arxiv.org/abs/1603.07230>

Three term relations for a class of bivariate orthogonal polynomials
Misael Marriaga, Teresa E. Pérez, Miguel A. Piñar

<http://arxiv.org/abs/1603.07261>

A characterization theorem and its applications for d-orthogonality of Sheffer polynomial sets

Serhan Varma

<http://arxiv.org/abs/1603.07566>

Zeros of a cross-product of the Coulomb wave and Tricomi hypergeometric functions

Árpád Baricz

<http://arxiv.org/abs/1603.07657>

Generating Functions for Products of Special Laguerre 2D and Hermite 2D Polynomials

Alfred Wünsche

<http://arxiv.org/abs/1603.07705>

Orthogonal polynomials associated with equilibrium measures on \mathbb{R}

Gökalp Alpan

<http://arxiv.org/abs/1603.08162>

Minimal Cubature rules and polynomial interpolation in two variables II

Yuan Xu

<http://arxiv.org/abs/1603.08504>

Turán type inequalities for Mittag-Leffler functions

Sergei M. Sitnik, Khaled Mehrez

<http://arxiv.org/abs/1603.08842>

A Riemann-Hilbert approach for the Novikov equation

Anne Boutet de Monvel, Dmitry Shepelsky, Lech Zielinski

<http://arxiv.org/abs/1603.09101>

Some Congruences of a Restricted Bipartition Function

Nipen Saikia, Chayanika Boruah

<http://arxiv.org/abs/1603.09156>

New identities for binary Krawtchouk polynomials, binomial coefficients and Catalan numbers

Ricardo A. Podestá

<http://arxiv.org/abs/1603.09250>

Fourier coefficients of meromorphic modular forms and a question of Petersson

Kathrin Bringmann, Ben Kane

<http://arxiv.org/abs/1603.09414>

Lattice equations arising from discrete Painlevé systems. II. $A_4^{(1)}$ case

Nalini Joshi, Nobutaka Nakazono, Yang Shi

<http://arxiv.org/abs/1603.09481>

A generalization of the 2D Slepian functions

Fethi Bouzeffour

<http://arxiv.org/abs/1603.09494>

Rényi, Shannon and Tsallis entropies of Rydberg hydrogenic systems

I.V. Toranzo, J. S. Dehesa

<http://arxiv.org/abs/1603.09556>

Improved bounds for Fourier coefficients of Siegel modular forms

Kathrin Bringmann

<http://arxiv.org/abs/1603.09587>

On the number of lattice convex chains

Julien Bureaux, Nathanaël Enriquez

<http://arxiv.org/abs/1603.09622>

Bipartite Chebyshev polynomials and elliptic integrals expressible by elementary functions

Kazuto Asai

<http://arxiv.org/abs/1604.00042>

Derived equivalence, Albanese varieties, and the zeta functions of 3-dimensional varieties

Katrina Honigs

<http://arxiv.org/abs/1604.00186>

Characterizations of classical orthogonal polynomials on quadratic lattices

M. Njinkeu Sandjon, A. Branquinho, M. Foupouagnigni, I. Area

<http://arxiv.org/abs/1604.00480>

Three-Term Relations for ${}_3F_2(1)$

Akihito Ebisu, Katsunori Iwasaki

<http://arxiv.org/abs/1604.00622>

On a duality formula for certain sums of values of poly-Bernoulli polynomials and its application

Masanobu Kaneko, Fumi Sakurai, Hirofumi Tsumura

<http://arxiv.org/abs/1604.00663>

Doron Gepner's Statistics on Words in 1,2,3 is (most probably) Asymptotically Logistic

Doron Zeilberger

<http://arxiv.org/abs/1604.00714>

Orthogonal Polynomials from Hermitian Matrices II

Satoru Odake, Ryu Sasaki

<http://arxiv.org/abs/1604.00753>

The Fourier series of the log-Barnes function

István Mezö

<http://arxiv.org/abs/1604.00929>

Application of Modal Filtering to a Spectral Difference Method

Jan Glaubitz, Philipp Öffner, Thomas Sonar

<http://arxiv.org/abs/1604.00941>

Quantum mock modular forms arising from eta-theta functions

Amanda Folsom, Sharon Garthwaite, Soon-Yi Kang, Holly Swisher, Stephanie Treneer

<http://arxiv.org/abs/1604.01060>

Bessel operators on Jordan pairs and small representations of semisimple Lie groups
Jan Möllers, Benjamin Schwarz

<http://arxiv.org/abs/1604.01095>

Exact diagonalization of the d -dimensional confined quantum harmonic oscillator
Kunle Adegoke, Adenike Olatinwo, Henry Otoberise, Funmi Akintujoye, Afees Tihamiyu

<http://arxiv.org/abs/1604.01106>

Crouching AGM, Hidden Modularity
Shaun Cooper, Jesús Guillera, Armin Straub, Wadim Zudilin

<http://arxiv.org/abs/1604.01820>

Algebro-geometric solutions to triangular Schlesinger systems
Vladimir Dragovic, Vasilisa Shramchenko

<http://arxiv.org/abs/1604.01977>

Asymptotic behavior of partial and false theta functions arising from Jacobi forms and regularized characters
Kathrin Bringmann, Amanda Folsom, Antun Milas

<http://arxiv.org/abs/1604.02452>

Scattering amplitudes for the rationally extended P T symmetric complex potentials
Nisha Kumari, Rajesh Kumar Yadav, Avinash Khare, Bijan Bagchi, Bhabani Prasad Mandal

<http://arxiv.org/abs/1604.02530>

Lax pairs for additive difference Painlevé equations
Hidehito Nagao

<http://arxiv.org/abs/1604.02649>

Bounds for the radii of univalence of some special functions
Ibrahim Aktaş, Árpád Baricz, Nihat Yağmur

<http://arxiv.org/abs/1604.03070>

A vector equilibrium problem for Muttalib-Borodin biorthogonal ensembles
Arno B.J. Kuijlaars

<http://arxiv.org/abs/1604.03082>

Monodromy dependence and connection formulae for isomonodromic tau functions
A. Its, O. Lisovyy, A. Prokhorov

<http://arxiv.org/abs/1604.03133>

An Update on Local Universality Limits for Correlation Functions generated by Unitary Ensembles (First Draft)
Doron S Lubinsky

<http://arxiv.org/abs/1604.03155>

Fast convolution with free-space Green's functions
Felipe Vico, Leslie Greengard, Miguel Ferrando

<http://arxiv.org/abs/1604.03245>

A fresh approach to classical Eisenstein series and the newer Hilbert-Eisenstein series
Paul L. Butzer, Tibor K. Pogány

<http://arxiv.org/abs/1604.03340>

On almost homogeneous Schroedinger operators
Jan Dereziński, Serge Richard

<http://arxiv.org/abs/1604.03579>

Metrisability of Painlevé equations
Felipe Contatto, Maciej Dunajski

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A (p, q) -Analogue of Poly-Euler Polynomials and Some Related Polynomials
Takao Komatsu, José L. Ramírez, Víctor F. Sirvent

<http://arxiv.org/abs/1604.04234>

Finite braid group orbits in $\text{Aff}(\mathbb{C})$ -character varieties of the punctured sphere
Gaël Cousin, Delphine Moussard

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Conditional estimates on small distances between ordinates of zeros of $\zeta(s)$ and $\zeta'(s)$
Fan Ge

<http://arxiv.org/abs/1604.04381>

The Sine_β operator
Benedek Valkó, Bálint Virág

<http://arxiv.org/abs/1604.04483>

On the numerical quadrature of weakly singular oscillatory integral and its fast implementation
Zhenhua Xu

<http://arxiv.org/abs/1604.04682>

A representation of the Dickson polynomials of the third kind by Legendre functions
Neranga Fernando, Solomon Manukure

<http://arxiv.org/abs/1604.04920>

On some Algebraic Properties for q -Meixner Multiple Orthogonal Polynomials of the First Kind
J. Arvesú, A.M. Ramírez-Aberasturis

<http://arxiv.org/abs/1604.04976>

Spirallikeness of shifted hypergeometric functions
Toshiyuki Sugawa, Li-Mei Wang

<http://arxiv.org/abs/1604.05077>

Mathieu-type series built by (p, q) -extended Gaussian hypergeometric function
Junesang Choi, Rakesh K. Parmar, Tibor K. Pogány

<http://arxiv.org/abs/1604.05140>

Fast Fourier Transforms for Spherical Gauss-Laguerre Basis Functions
Jürgen Prestin, Christian Wülker

<http://arxiv.org/abs/1604.05163>

Unified Bessel, Modified Bessel, Spherical Bessel and Bessel–Clifford Functions
Banu Yılmaz Yaşar, Mehmet Ali Özarıslan

<http://arxiv.org/abs/1604.05179>

On zeros of some entire functions
Bing He

<http://arxiv.org/abs/1604.05294>

Vector-valued modular forms and the Mock Theta Conjectures
Nickolas Andersen

<http://arxiv.org/abs/1604.05345>

Congruences modulo powers of 2 for the number of unique path partitions
Christian Krattenthaler

<http://arxiv.org/abs/1604.05357>

Solution of the nonlinear equation of a divergent type in the corner point domain
E.E. Perepelkin, B.I. Sadovnikov, N.G. Inozemtseva

<http://arxiv.org/abs/1604.05533>

On Arakawa–Kaneko zeta-functions associated with $GL_2(\mathbb{C})$ and their functional relations
Yasushi Komori, Hirofumi Tsumura

<http://arxiv.org/abs/1604.05960>

Bernstein–gamma functions and exponential functionals of Levy Processes
Pierre Patie, Mladen Savov

<http://arxiv.org/abs/1604.06226>

The monodromy representations of local systems associated with Lauricella’s F_D
Keiji Matsumoto

<http://arxiv.org/abs/1604.06321>

Mass-deformed ABJ(M) theory, Meixner–Pollaczek polynomials, and $su(1, 1)$ coherent states/oscillators
Miguel Tierz

<http://arxiv.org/abs/1604.06428>

Massless Fermions in anisotropic Bianchi type I spacetimes
Matthias Wollensak

<http://arxiv.org/abs/1604.06510>

Time and band limiting for matrix valued functions
F. Alberto Grünbaum, Inés Pacharoni, Ignacio Nahuel Zurrián

<http://arxiv.org/abs/1604.06786>

Spectral determinants and quantum theta functions
Alba Grassi

<http://arxiv.org/abs/1604.06869>

Remarks on τ -functions for the difference Painlevé equations of type E_8
Masatoshi Noumi

<http://arxiv.org/abs/1604.07019>

Time Varying Isotropic Vector Random Fields on Spheres
Chunsheng Ma

<http://arxiv.org/abs/1604.07486>

Fast polynomial transforms based on Toeplitz and Hankel matrices
Alex Townsend, Marcus Webb, Sheehan Olver

<http://arxiv.org/abs/1604.07613>

Hypergeometric functions and algebraic curves $y^e = x^d + ax + b$
Pramod Kumar Kewat, Ram Kumar

<http://arxiv.org/abs/1604.07772>

High order recurrence relation, Hermite–Padé approximation, and Nikishin systems
D. Barrios Rolanía, J. S. Geronimo, G. López Lagomasino

<http://arxiv.org/abs/1604.07846>

Approximation and orthogonality in Sobolev spaces on a triangle
Yuan Xu

<http://arxiv.org/abs/1604.07847>

Multi–Poisson approach to the Painlevé equations: from the isospectral deformation to the isomonodromic deformation
Hayato Chiba

<http://arxiv.org/abs/1604.07977>

Experimental observations on q –Fibonacci numbers
Johann Cigler

<http://arxiv.org/abs/1604.08015>

Zeros of the first derivative of Dirichlet L –functions
Hirotaka Akatsuka, Ade Irma Suriajaya

<http://arxiv.org/abs/1604.08195>

Evaluating Theta Derivatives with Rational Characteristics
Shaul Zemel

<http://arxiv.org/abs/1604.08399>

Thinning and conditioning of the Circular Unitary Ensemble
Christophe Charlier, Tom Claeys

<http://arxiv.org/abs/1604.08441>

Integral and Series Representations of q –Polynomials and Functions: Part I
Mourad E. H. Ismail, Ruiming Zhang

Topic #9 ——— OP – SF Net 23.3 ——— May 15, 2016

From: OP–SF Net Editors

Subject: About the Activity Group

The SIAM Activity Group on Orthogonal Polynomials and Special Functions consists of a broad set of mathematicians, both pure and applied. The Group also includes engineers

and scientists, students as well as experts. We have around 155 members scattered about in more than 20 countries. Whatever your specialty might be, we welcome your participation in this classical, and yet modern, topic. Our WWW home page is:
<http://math.nist.gov/opsf>

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), Kerstin Jordaan (kerstin.jordaan@up.ac.za), and Sarah Post (spost@hawaii.edu).

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>

SIAM-OPSF (OP-SF Talk), which was recently moved to a SIAM server, facilitates communication among members and friends of the Activity Group. To subscribe, go to <http://lists.siam.org/mailman/listinfo/siam-OPSF> and follow the instructions under the sub-heading "Subscribing to SIAM-OPSF". To contribute an item to the discussion, send e-mail to siam-opsf@siam.org. The moderators are Bonita Saunders (bonita.saunders@nist.gov) and Diego Dominici (dominid@newpaltz.edu).

SIAM has several categories of membership, including low-cost categories for students and residents of developing countries. In addition, there is the possibility of reduced rate membership for the members of several societies with which SIAM has a reciprocity agreement; see <http://www.siam.org/membership/individual/reciprocal.php>. For current information on SIAM and Activity Group membership, contact:

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WWW : <http://www.siam.org>

Topic #10 OP – SF Net 23.3 May 15, 2016

From: OP-SF Net Editors

Subject: Submitting contributions to OP-SF NET and SIAM-OPSF (OP-SF Talk)

To contribute a news item to OP-SF NET, send e-mail to one of the OP-SF Editors howard.cohl@nist.gov, kerstin.jordaan@up.ac.za, or spost@hawaii.edu.

Contributions to OP-SF NET 23.4 should be sent by July 1, 2016.

OP-SF NET is an electronic newsletter of the SIAM Activity Group on Special Functions and Orthogonal Polynomials. We disseminate your contributions on anything of interest to the special functions and orthogonal polynomials community. This includes announcements of conferences, forthcoming books, new software, electronic archives, research questions, and job openings as well as news about new appointments, promotions, research visitors, awards and prizes. OP-SF Net is transmitted periodically through a post to SIAM-OPSF

(OP–SF Talk).

SIAM-OPSF (OP–SF Talk) is a listserv of the SIAM Activity Group on Special Functions and Orthogonal Polynomials, which facilitates communication among members, and friends of the Activity Group. See the previous Topic. To post an item to the listserv, send e-mail to siam-opsf@siam.org.

WWW home page of this Activity Group:

<http://math.nist.gov/opsf>

Information on joining SIAM and this activity group: service@siam.org

The elected Officers of the Activity Group (2014–2016) are:

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
Sarah Post, OP–SF NET co–editor
Diego Dominici, OP–SF Talk moderator
Bonita Saunders, Webmaster and OP–SF Talk moderator

Thought of the month

“Archimedes will be remembered when Aeschylus is forgotten, because languages die and mathematical ideas do not. “Immortality” may be a silly word, but probably a mathematician has the best chance of whatever it may mean.”

G. H. Hardy, *A Mathematician’s Apology*, 1940.