

OP-SF NET – Volume 25, Number 5 – September 15, 2018

The Electronic News Net of the
SIAM Activity Group on Orthogonal Polynomials and Special Functions

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

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Calendar of Events:

October 5–12, 2018

AIMS-Volkswagen Stiftung Workshop on Introduction to Orthogonal Polynomials and Applications, [Hotel Prince de Galles](#), Douala/Limbe, Cameroon

<http://www.aims-volkswagen-workshops.org/workshop-information.html>

October 26–29, 2018

The Mediterranean International Conference of Pure and Applied Mathematics and Related Areas, Dedicated to Professor Gradimir V. Milovanovic on the occasion of his 70th Anniversary, Antalya, Turkey

<http://micopam2018.akdeniz.edu.tr/information>

November 11–17, 2018

Symmetries and Integrability of Difference Equations (SIDE13:2018)
Fukuoka, Japan

<http://side13conference.net>

November 22–24, 2018

International Conference on Special Functions & Applications (ICSFA-2018)
Amal Jyothi College of Engineering, Kanjirappally, Kottayam (Kerala), India
<http://www.ssfaindia.org> (see link therein to “2018: XVII Annual Meeting”)

December 11–14, 2018

Second Joint Meeting Spain–Brazil in Mathematics,
Special session on Special Functions and Approximation Theory
Cadiz, Spain
<http://spabrazmathcadiz18.uca.es/web/Congreso>

January 16–19, 2019

2019 Joint Mathematics Meetings, American Mathematical Society,
Baltimore Convention Center, Baltimore, Maryland, USA
https://jointmathematicsmeetings.org/meetings/national/jmm2019/2217_program.html
*AMS Special Session on Orthogonal Polynomials, Quantum Probability,
Harmonic and Stochastic Analysis,*
Organized by Nobuhiro Asal, Rodica Costin, Aurel L. Star and Hiroaki Yoshida

June 16–20, 2019

Elliptic integrable systems, special functions and quantum field theory
Nordic Institute for Theoretical Physics (**NORDITA**), Stockholm, Sweden
<http://www.nordita.org/elliptic2019>

July 22–26, 2019

International Symposium on Orthogonal Polynomials, Special Functions & Applications
(OPSFA–15)
RISC, Johannes Kepler University, Linz, Austria
<http://www.risc.jku.at/conferences/opsfa2019/>

September 14–15, 2019

AMS Fall Central Sectional Meeting
Special Session on “Special Functions and Orthogonal Polynomials”
University of Wisconsin–Madison, Madison, Wisconsin, USA
http://www.ams.org/meetings/sectional/2267_program.html

Topic #1 ——— OP – SF Net 25.5 ——— September 15, 2018

From: Walter Van Assche (walter.vanassche@kuleuven.be)
Subject: Call for Nominations – Gábor Szegő Prize

Call for Nominations: **Gábor Szegő Prize**
Nomination Deadline: **October 15, 2018**

We are still accepting nominations for the [Gábor Szegő Prize](#). The SIAM Activity Group on Orthogonal Polynomials and Special Functions (SIAG/OPSF) awards the Gábor Szegő Prize every two years to one individual in their early career for outstanding research contributions in the area of orthogonal polynomials and special functions.

Eligibility Criteria:

The candidate must have no more than 10 years (full time equivalent) of involvement in mathematics since receiving their PhD at the award date, allowing for breaks in continuity. The prize selection committee can make exceptions, if in their opinion the candidate is at an equivalent stage in their career.

Selection Committee:

- Walter Van Assche, Chair, KU Leuven, Belgium
- David Gómez-Ullate, Universidad Complutense De Madrid, Spain
- Andrei Martínez-Finkelshtein, Baylor University, Texas, USA
- Sarah Post, University of Hawai'i at Mānoa, Hawaii, USA
- Bonita Saunders, National Institute of Standards and Technology, Maryland, USA

The candidate's work must contain significant research contributions in the area of orthogonal polynomials and special functions. One key paper must be cited as evidencing the contribution though a body of papers may be discussed in the nomination. The qualifying paper must have been published in English in a peer-reviewed journal.

For the 2019 award, the candidate must have received their PhD no earlier than January 1, 2009.

Required Materials:

- Letter of nomination signed by two current members of the SIAG/OPSF;
- Candidate's CV; and
- Bibliographic citation for candidate's key contributing paper.

Please visit the following [link](#) at SIAM to learn more about the Gábor Szegő Prize.

Topic #2 ——— OP – SF Net 25.5 ——— September 15, 2018

From: OP-SF Net Editors

Subject: Plenary speakers for OPSFA-15 announced

The plenary speakers for [OPSFA-15](#), July 22-26, 2019 in Hagenberg, Austria, have been announced. See <https://www3.risc.jku.at/conferences/opsfa2019/?content=program>.

Invited plenary speakers:

- [Peter Clarkson](#) (University of Kent, UK);
- [Christian Krattenthaler](#) (Universität Wien, Vienna, Austria);
- [Irina Nenciu](#) (University of Illinois at Chicago, USA);
- [Veronika Pillwein](#) (Johannes Kepler Universität, Linz, Austria);
- [Mikhail Sodin](#) (Tel Aviv University, Israel);
- [Alan Sokal](#) (New York University, USA);
- [Armin Straub](#) (University of South Alabama, USA); and
- [Luc Vinet](#) (Université de Montréal, Canada).

From: Walter Van Assche (walter.vanassche@kuleuven.be)

Subject: Report on Conference in Copenhagen, August 14–17, 2018

Report on the conference *Orthogonal Polynomials and Holomorphic Dynamics*, Copenhagen, Denmark, August 14–17, 2018.

The past few years Copenhagen has been hosting a number of interesting conferences relevant to our activity group: a workshop on *Orthogonal Polynomials, Hankel and Jacobi Matrices* (August 26–28, 2009), an international symposium on *Orthogonal Polynomials and Special Functions – a complex analytic perspective* (June 11–15, 2012), a workshop on *Special Functions and Their Applications* (August 28–30, 2013), an international symposium *The Real World is Complex*, in honour of Christian Berg (August 26–28, 2015), a workshop on *Orthogonal Polynomials and Special Functions* (November 16–17, 2016).

For this year, an international conference on *Orthogonal Polynomials and Holomorphic Dynamics* was held on August 14–17 at the Carlsberg Academy. The aim of the conference was to bring together experts in areas related to orthogonal polynomials and holomorphic dynamical systems to exchange knowledge. The organizers were Jacob Christiansen (Lund University, Sweden) and Henrik Pedersen (University of Copenhagen, Denmark), both from our activity group, and Christian Henriksen (Technical University of Denmark) and Carsten Lunde Petersen (Roskilde University, Denmark), who are experts in holomorphic dynamics.



Figure 1: Conference group picture.

Some may wonder: why are both topics related? Holomorphic dynamics is about the iteration of rational functions, but for iterations of a polynomial there is an interesting connection with orthogonal polynomials. Let $T(z) = z^d + k_1 z^{d-1} + \dots$ be a polynomial of degree $d \geq 2$ and consider its iterates $T^2(z) = T(T(z))$ and in general $T^n(z) = T^{n-1}(T(z))$, then $T^n(z)$ is a polynomial of degree d^n and these are part of the sequence of orthogonal polynomials for the equilibrium measure of a special set B , which is the Julia set for the polynomial T , the set where $(T^n(z))_n$ is not normal. Indeed, Barnsley, Harrington and Geronimo showed in 1982, that for the sequence of monic orthogonal polynomials $(P_k)_k$ for the equilibrium measure on B , one has

$$P_1(z) = z + k_1/d, \quad P_{kd}(z) = P_k(T(z)), \quad P_{d^n}(z) = T^n(z) + k_1/d.$$

Hence the iteration of a polynomial is intimately related to orthogonal polynomials and potential theory for the corresponding Julia set.

The workshop had a number of invited speakers with talks on orthogonal polynomials or the iteration of rational maps. Two speakers were able to integrate both topics into one talk. Carsten Lunde Petersen's talk was on *Orthogonal polynomials and dynamical systems* and it should have been the first talk of the workshop, but was given on the second day. Kevin Pilgrim's talk *Gegenbauer polynomials and critically fixed Newton's method* also succeeded in connecting iterations with the well known Gegenbauer polynomials. David Damanik's talk on *The Fibonacci Hamiltonian* explained the spectral properties of a special Schrödinger operator via a polynomial dynamical system related to the Fibonacci sequence. Most of the other talks were either on orthogonal polynomials, determinants of orthogonal polynomials, paraorthogonal polynomials, exceptional polynomials, Chebyshev polynomials, multiple orthogonal polynomials, and moment problems on the one hand, or conformal fitness and uniformization, Hausdorff dimension of Julia sets, random complex dynamics, Abelian coverings, equipotential gluing, and hyperbolic components on the other hand. Barry Simon happened to be in Copenhagen that week so that we had the pleasure to hear how he was able to connect orthogonal polynomials on the unit circle with Poncelet's theorem and the numerical range of certain finite dimensional contractions.

My advice to the members of our activity group is to try to attend one of these Copenhagen workshops or conferences. You will meet people from related areas and learn how orthogonal polynomials and special functions are useful in other areas of mathematics.

Topic #4 ——— OP – SF Net 25.5 ——— September 15, 2018

From: Tom Koornwinder (T.H.Koornwinder@uva.nl)

Subject: Report on NIST DLMF workshop, August 27–31, 2018

The Digital Library of Mathematical Functions (DLMF), <https://dlmf.nist.gov>, was launched in 2010. No doubt, the readers of this Newsletter are familiar with it. Although minor updates are made regularly, the need was felt to prepare major updates of some chapters, and even to add new chapters. In particular, work to thoroughly update Chapter 18 (*Orthogonal Polynomials*) and to expand its Subsection 18.37 (*Classical OPs in Two or More Variables*) into a separate chapter, is now almost completed. For a last boost to this project, the authors and their advisors met this summer in late August for a one-week workshop at NIST, Gaithersburg, Maryland, close to Washington DC. Participants were the authors Bill Reinhardt, Yuan Xu and myself, the mathematics advisor Mourad Ismail, and the general mathematics editor Adri Olde Daalhuis. We discussed, corrected and extended what was already written, and we added new parts. There was also frequent interaction

with the other DLMF editors, who belong to the NIST staff. Furthermore, we gave short informal presentations to each other about recent work we had done, and we got a preview of recent developments at NIST related to the DLMF. It was the general feeling that this way of working together is very stimulating and productive.



Figure 2: DLMF workshop attendees working and having dinner.

The hottest days this summer at America's east coast were precisely during the week of our workshop. We were lodged at the pleasant Rio Washingtonian Center, an area well equipped with restaurants, shops and other entertainment.

Many thanks to NIST for the hospitality, and to Dan Lozier and Howard Cohl for raising the idea of this workshop.

Topic #5 ——— OP – SF Net 25.5 ——— September 15, 2018

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 July and August 2018. This list has been separated into two categories.

OP-SF Net Subscriber E-Prints

<http://arxiv.org/abs/1807.00356>

Hyponormal Toeplitz Operators with Non-Harmonic Algebraic Symbol
Brian Simanek

<http://arxiv.org/abs/1807.00444>

On Witten's extremal partition functions
Ken Ono, Larry Rolen

<http://arxiv.org/abs/1807.00450>

Nonlinear q -Stokes phenomena for q -Painlevé I
Nalini Joshi, Christopher Lustrì, Steven Luu

<http://arxiv.org/abs/1807.00608>

Rigorous asymptotics of a KdV soliton gas
Manuela Girotti, Tamara Grava, Ken D. T.-R. McLaughlin

<http://arxiv.org/abs/1807.03639>

Double-Layer Potentials for a Generalized Bi-Axially Symmetric Helmholtz Equation II
Abdumauvlen Berdyshev, Anvar Hasanov, Tuhtasin Ergashev

<http://arxiv.org/abs/1807.04195>

Orthogonal structure on a quadratic curve
Sheehan Olver, Yuan Xu

<http://arxiv.org/abs/1807.04797>

Rényi entropies for multidimensional hydrogenic systems in position and momentum spaces
D. Puertas-Centeno, I.V. Toranzo, J.S. Dehesa

<http://arxiv.org/abs/1807.05961>

Painlevé III' and the Hankel Determinant Generated by a Singularly Perturbed Gaussian Weight
Chao Min, Shulin Lyu, Yang Chen

<http://arxiv.org/abs/1807.06162>

Constructing Initial Value Spaces of Lattice Equations
Nalini Joshi, Sarah Lobb, Matthew Nolan

<http://arxiv.org/abs/1807.07119>

Matrix Biorthogonal Polynomials: eigenvalue problems and non-Abelian discrete Painlevé equations
Amilcar Branquinho, Ana Foulquié Moreno, Manuel Mañas

<http://arxiv.org/abs/1807.08051>

Automatic Proof of Theta-Function Identities
Jie Frye, Frank Garvan

<http://arxiv.org/abs/1807.08330>

An interesting class of Hankel determinants
Johann Cigler, Mike Tyson

<http://arxiv.org/abs/1807.08877>

Spectra of Tridiagonal Matrices over a Field
R. S. Costas-Santos, C. R. Johnson

<http://arxiv.org/abs/1807.09238>

Markov semi-groups associated with the complex unimodular group $Sl(2, \mathbb{C})$
Nizar Demni

<http://arxiv.org/abs/1807.09290>

Reciprocals of exponential polynomials and permutation enumeration
Ira M. Gessel

<http://arxiv.org/abs/1807.10974>

Polynomial Identities Implying Capparelli's Partition Theorems
Alexander Berkovich, Ali K. Uncu

<http://arxiv.org/abs/1808.00153>

The Heun operator of Hahn type
Luc Vinet, Alexei Zhedanov

<http://arxiv.org/abs/1808.00512>

Time-dependent polynomials with one multiple root and new solvable dynamical systems
Oksana Bihun

<http://arxiv.org/abs/1808.00550>

Solvable dynamical systems and isospectral matrices defined in terms of the zeros of orthogonal or otherwise special polynomials
Oksana Bihun

<http://arxiv.org/abs/1808.01193>

Asymptotics of partition functions in a fermionic matrix model and of related q -polynomials
Dan Dai, Mourad E. H. Ismail, Xiang-Sheng Wang

<http://arxiv.org/abs/1808.01421>

Rational Solutions of the Painlevé-III Equation: Large Parameter Asymptotics
Thomas Bothner, Peter D. Miller

<http://arxiv.org/abs/1808.01866>

Coloured stochastic vertex models and their spectral theory
Alexei Borodin, Michael Wheeler

<http://arxiv.org/abs/1808.02606>

Short distance asymptotics for a generalized two-point scaling function in the two-dimensional Ising model
Thomas Bothner, William Warner

<http://arxiv.org/abs/1808.02702>

New lower bounds on the size of arcs and new optimal projective linear codes
Michael Braun

<http://arxiv.org/abs/1808.03014>

Extensions of the classical transformations of the hypergeometric function ${}_3F_2$
Robert S. Maier

<http://arxiv.org/abs/1808.03369>

Intertwining operators associated to dihedral groups
Yuan Xu

<http://arxiv.org/abs/1808.03441>

q -special functions, basic hypergeometric series and operators
Erik Koelink

<http://arxiv.org/abs/1808.04524>

Darboux evaluations for hypergeometric functions with the projective monodromy $PSL(2, \mathbb{F}_7)$
Raimundas Vidunas

<http://arxiv.org/abs/1808.04877>

Eigenvalue problems for Lamé's differential equation
Hans Volkmer

<http://arxiv.org/abs/1808.05105>

Inequalities for some basic hypergeometric functions
S. I. Kalmykov, D. B. Karp

<http://arxiv.org/abs/1808.05251>

A positive-definite inner product for vector-valued Macdonald polynomials
Charles F. Dunkl

<http://arxiv.org/abs/1808.05255>

A Combinatorial-Probabilistic Analysis of Bitcoin Attacks
Evangelos Georgiadis, Doron Zeilberger

<http://arxiv.org/abs/1808.06695>

The q -Heun operator of big q -Jacobi type and the q -Heun algebra
Pascal Baseilhac, Luc Vinet, Alexei Zhedanov

<http://arxiv.org/abs/1808.06730>

D.H. Lehmer's Tridiagonal determinant: An Etude in (Andrews-Inspired) Experimental Mathematics
Shalosh B. Ekhad, Doron Zeilberger

<http://arxiv.org/abs/1808.07006>

Observations on continued fractions
Leonhard Euler (Author), Alexander Aycock (Translator)

<http://arxiv.org/abs/1808.10520>

A discrete realization of the higher rank Racah algebra
Hendrik De Bie, Wouter van de Vijver

Other Relevant OP-SF E-Prints

<http://arxiv.org/abs/1807.00034>

Behavior of zeros of X_1 -Jacobi and X_1 -Laguerre exceptional polynomials
Yen Chi Lun

<http://arxiv.org/abs/1807.00088>

Asymptotics of recurrence coefficients for the Laguerre weight with a singularity at the edge
Xiao-Bo Wu

<http://arxiv.org/abs/1807.00409>

New Representation of Levy Stochastic Area, Based on Legendre polynomials
Dmitriy F. Kuznetsov

<http://arxiv.org/abs/1807.00903>

Third Double-layer Potential for generalized bi-axially symmetric Helmholtz equation
Tuhtasin Ergashev

<http://arxiv.org/abs/1807.01564>

On the zero set of the partial theta function
Vladimir Petrov Kostov

<http://arxiv.org/abs/1807.02302>

Asymptotics in Fourier space of self-similar solutions to the modified Korteweg-de Vries equation

Simão Correia, Raphaël Côte, Luis Vega

<http://arxiv.org/abs/1807.02418>

A Semi-Lagrangian Spectral Method for the Vlasov-Poisson System based on Fourier, Legendre and Hermite Polynomials

Lorella Fatone, Daniele Funaro, Gianmarco Manzini

<http://arxiv.org/abs/1807.02640>

Hörmander's multiplier theorem for the Dunkl transform

Jacek Dziubański, Agnieszka Hejna

<http://arxiv.org/abs/1807.02677>

Generalized Green functions associated to complex reflection groups

Toshiaki Shoji

<http://arxiv.org/abs/1807.02744>

On the Eisenstein polynomials and the zeta polynomials

Tsuyoshi Mieuzaki

<http://arxiv.org/abs/1807.02756>

Asymptotic behavior of spectral of Neumann-Poincaré operator in Helmholtz system

Xiaoping Fang, Youjun Deng, Xiaohong Chen

<http://arxiv.org/abs/1807.03271>

Lattice paths and branched continued fractions: An infinite sequence of generalizations of the Stieltjes-Rogers and Thron-Rogers polynomials, with coefficientwise Hankel-total positivity

Mathias Pétréolle, Alan D. Sokal, Bao-Xuan Zhu

<http://arxiv.org/abs/1807.03377>

Approximating tau-functions by theta-functions

Boris Dubrovin

<http://arxiv.org/abs/1807.03393>

Continuous-stage Runge-Kutta-Nyström methods

Wensheng Tang

<http://arxiv.org/abs/1807.03889>

Estimators of the proportion of false null hypotheses: I "universal construction via Lebesgue-Stieltjes integral equations and uniform consistency under independence"

Xiongzhi Chen

<http://arxiv.org/abs/1807.03937>

Test function method for blow-up phenomena of semilinear wave equations and their weakly coupled systems

Masahiro Ikeda, Motohiro Sobajima, Kyouhei Wakasa

<http://arxiv.org/abs/1807.03957>

Proofs of Some Conjectures of Chan on Appell-Lerch Sums

Nayandeep Deka Baruah, Nilufar Mana Begum

<http://arxiv.org/abs/1807.04124>

Universality Theorems for the Hurwitz zeta Function with an Algebraic Parameter
Athanasios Sourmelidis, Jörn Steuding

<http://arxiv.org/abs/1807.04125>

Evaluation of some non-elementary integrals involving sine, cosine, exponential and logarithmic integrals: Part II
Victor Nijimbere

<http://arxiv.org/abs/1807.04442>

Numerical Approach to Painlevé Transcendents on Unbounded Domains
Christian Klein, Nikola Stoilov

<http://arxiv.org/abs/1807.04696>

Equivalent elastica knots
Alain J. Brizard, David Pfefferlé

<http://arxiv.org/abs/1807.04816>

Exterior square gamma factors for cuspidal representations of GL_n : finite field analogs and level zero representations
Rongqing Ye, Elad Zelingher

<http://arxiv.org/abs/1807.04860>

Large deviations and continuity estimates for the derivative of a random model of $\log |\zeta|$ on the critical line
Louis-Pierre Arguin, Frédéric Ouimet

<http://arxiv.org/abs/1807.05163>

Rationally extended many-body truncated Calogero-Sutherland model
Rajesh Kumar Yadav, Avinash Khare, Nisha Kumari, Bhabani Prasad Mandal

<http://arxiv.org/abs/1807.05257>

Complete monotonicity properties of a function involving the polygamma function
Kwara Nantomah

<http://arxiv.org/abs/1807.05287>

The ρ parameter at three loops and elliptic integrals
J. Blümlein, A. De Freitas, M. van Hoeij, E. Imamoglu, P. Marquard, C. Schneider

<http://arxiv.org/abs/1807.05294>

Weight distributions, zeta functions and Riemann hypothesis for linear and algebraic geometry codes
Artur Elezi, Tony Shaska

<http://arxiv.org/abs/1807.05394>

Riemann-Liouville Operator via Decomposition on Jacobi Series
M.V. Kukushkin

<http://arxiv.org/abs/1807.05580>

The Hastings-McLeod solution to the generalized second Painlevé equation
Marcel G. Clerc, Michał Kowalczyk, Panayotis Smyrnelis

<http://arxiv.org/abs/1807.06095>

Nonlinear librations of distant retrograde orbits: a perturbative approach – The Hill problem case

Martin Lara

<http://arxiv.org/abs/1807.06134>

Universal Behavior of the Corners of Orbital Beta Processes

Cesar Cuenca

<http://arxiv.org/abs/1807.06267>

On analytical perturbative solution of ABJM quantum spectral curve

R.N. Lee, A.I. Onishchenko

<http://arxiv.org/abs/1807.07342>

Matrix Model for Riemann zeta via its Local Factors

Arghya Chattopadhyay, Parikshit Dutta, Suvankar Dutta, Debashis Ghoshal

<http://arxiv.org/abs/1807.07394>

A method for proving Ramanujan series for $1/\pi$

Jesús Guillera

<http://arxiv.org/abs/1807.07426>

Generalized confluent hypergeometric solutions of the Heun confluent equation

T. A. Ishkhanyan, A. M. Ishkhanyan

<http://arxiv.org/abs/1807.07781>

New indefinite integrals of Heun functions

Davide Batic, Omar Forrest, Marek Nowakowski

<http://arxiv.org/abs/1807.08287>

Two-Dimensional Elliptic Determinantal Point Processes and Related Systems

Makoto Katori

<http://arxiv.org/abs/1807.08527>

On the asymptotics of a cotangent sum related to the Estermann zeta function

George Fikioris

<http://arxiv.org/abs/1807.08700>

A class of peak polynomials related to Jacobi elliptic functions

Shi-Mei Ma, Jun Ma, Yeong-Nan Yeh

<http://arxiv.org/abs/1807.09022>

The periodic Schur process and free Fermions at finite temperature

Dan Betea, Jérémie Bouttier

<http://arxiv.org/abs/1807.09058>

Large-order asymptotics for multiple-pole solitons of the focusing nonlinear Schrödinger equation

Deniz Bilman, Robert Buckingham

<http://arxiv.org/abs/1807.09314>

Integral operators, bispectrality and growth of Fourier algebras

W. Riley Casper, Milen T. Yakimov

<https://arxiv.org/abs/1807.09445>

On a gateway between continuous and discrete Bessel and Laguerre processes
Laurent Miclo, Pierre Patie

<http://arxiv.org/abs/1807.09707>

Total variation estimates in the Breuer–Major theorem
David Nualart, Hongjuan Zhou

<http://arxiv.org/abs/1807.10011>

Padé approximations of a class of G -functions and some applications
Keijo Väänänen

<http://arxiv.org/abs/1807.10890>

Picard–Vessiot groups of Lauricella’s hypergeometric systems E_C and Calabi–Yau varieties
arising integral representations
Yoshiaki Goto, Kenji Koike

<http://arxiv.org/abs/1807.11100>

Convergence of Curve Shortening Flow to Translating Soliton
Beomjun Choi, Kyeongsu Choi, Panagiota Daskalopoulos

<http://arxiv.org/abs/1807.11201>

Transcendental sums related to the zeros of zeta functions
Sanoli Gun, M. Ram Murty, Purusottam Rath

<http://arxiv.org/abs/1807.11260>

Cumulative distribution functions for the five simplest natural exponential families
G erard Letac

<http://arxiv.org/abs/1807.11361>

Periodic travelling waves of the modified KdV equation and rogue waves on the periodic
background
Jinbing Chen, Dmitry E. Pelinovsky

<http://arxiv.org/abs/1807.11554>

Time–frequency transforms of white noises and Gaussian analytic functions
R emi Bardenet, Adrien Hardy

<http://arxiv.org/abs/1807.11642>

Extreme values for $S_n(\sigma, t)$ near the critical line
Andr es Chirre

<http://arxiv.org/abs/1807.11871>

Constraint polynomial approach – an alternative to the functional Bethe Ansatz method?
Alexander Moroz, Andrey E. Miroshnichenko

<http://arxiv.org/abs/1808.00431>

Records on the vanishing of Fourier coefficients of Powers Of the Dedekind Eta Function
Bernhard Heim, Markus Neuhauser, Alexander Weisse

<http://arxiv.org/abs/1808.00625>

Harmonic Hadamard manifolds and Gauss hypergeometric differential equations
Mitsuhiro Itoh, Hiroyasu Satoh

<http://arxiv.org/abs/1808.00658>

Computing the Dirichlet–Neumann Operator on a Cylinder
Saad Qadeer, Jon Wilkening

<http://arxiv.org/abs/1808.00891>

Decomposition formulas associated with the multivariable confluent hypergeometric functions
Tuhtasin Ergashev

<http://arxiv.org/abs/1808.01049>

Extensions of Ramanujan–Mordell formula with coefficients 1 and p
Zafer Selcuk Aygin

<http://arxiv.org/abs/1808.01144>

Stationary real solutions of the nonlinear Schrödinger equation on a ring with a defect
Axel Pérez–Obiol, Taksu Cheon

<http://arxiv.org/abs/1808.01259>

Bessel function asymptotics: a relation due to Lommel
P.L. Robinson

<http://arxiv.org/abs/1808.01264>

The resultant, the discriminant, and the derivative of generalized Fibonacci polynomials
Rigoberto Flórez, Robinson Higuita, Alexander Ramírez

<http://arxiv.org/abs/1808.01404>

Extended (p, q) –Mittag–Leffler function and its properties
A. Kilicman, G. Rahman, K.S. Nisar, S. Mubeen

<http://arxiv.org/abs/1808.02295>

Approximating the Riemann zeta function by Polynomials with Restricted Zeros
P. M. Gauthier

<http://arxiv.org/abs/1808.02311>

Nonvanishing modulo ℓ of Fourier coefficients of Jacobi forms
Markus Schwagenscheidt

<http://arxiv.org/abs/1808.02706>

An application of L^1 estimates for oscillating integrals to parabolic like semi–linear structurally damped σ –evolution models
Tuan Anh Dao, Michael Reissig

<http://arxiv.org/abs/1808.03066>

On the growth of Artin–Tits monoids and the partial theta function
Ramón Flores, Juan González–Meneses

<https://arxiv.org/abs/1808.03068>

Conjectures on the logarithmic derivatives of Artin L–functions II
Vincent Maillot, Damian Rössler

<http://arxiv.org/abs/1808.03086>

Discrete Stieltjes classes for log-Heine type distributions
Sofiya Ostrovska, Mehmet Turan

<http://arxiv.org/abs/1808.03290>

Infinite series of quaternionic 1-vertex cube complexes, the doubling construction, and explicit cubical Ramanujan complexes
Nithi Rungtanapirom, Jakob Stix, Alina Vdovina

<http://arxiv.org/abs/1808.03732>

The discrete case of the mixed joint universality for a class of certain partial zeta functions
Roma Kacinskaite, Kohji Matsumoto

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A Whittaker-Plancherel Inversion Formula for $SL_2(\mathbb{C})$
Zhi Qi, Chang Yang

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Beta super-functions on super-Grassmannians
Mee Seong Im, Michal Zakrzewski

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Eigenvectors of Deformed Wigner Random Matrices
Farzan Haddadi, Arash Amini

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Hypergeometric form of fundamental theorem of calculus
Petr Blaschke

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Non-Perturbative Large N Trans-series for the Gross-Witten-Wadia Beta Function
Anees Ahmed, Gerald V. Dunne

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Estimates of Fourier coefficients of cusp forms associated to cofinite Fuchsian subgroups
Anilatmaja Aryasomayajula

<http://arxiv.org/abs/1808.05430>

Permutations avoiding 312 and another pattern, Chebyshev polynomials and longest increasing subsequences
Toufik Mansour, Gökhan Yıldırım

<http://arxiv.org/abs/1808.05608>

On the n -th derivative and the fractional integration of Bessel functions with respect to the order
J. L. González-Santander

<http://arxiv.org/abs/1808.06179>

Elements of the q -Askey scheme in the algebra of symmetric functions
Cesar Cuenca, Grigori Olshanski

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Some hypergeometric summation theorems and reduction formulas via Laplace transform method

M. I. Qureshi, Showkat Ahmad Dar

<http://arxiv.org/abs/1808.06653>

On the Riemann zeta Function and the fractional part of rational powers

Tal Barnea

<http://arxiv.org/abs/1808.06782>

The divisibility of zeta functions of cyclotomic function fields

Daisuke Shiomi

<http://arxiv.org/abs/1808.06924>

General hypergeometric distribution: A basic statistical distribution for the number of overlapped elements in multiple subsets drawn from a finite population

Xing-gang Mao, Xiao-yan Xue

<http://arxiv.org/abs/1808.06959>

Normal matrix ensembles at the hard edge, orthogonal polynomials, and universality

Yacin Ameur

<http://arxiv.org/abs/1808.07970>

Properties of Lerch Sums and Ramanujan's Mock Theta Functions

N. D. Bagis

<http://arxiv.org/abs/1808.08337>

Multi-fold contour integrals of certain ratios of Euler gamma functions from Feynman diagrams: orthogonality of triangles

Ivan Gonzalez, Igor Kondrashuk, Eduardo A. Notte-Cuello, Ivan Parra-Ferrada

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Airy and Painlevé asymptotics for the mKdV equation

C. Charlier, J. Lenells

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Total integrals of solutions for Painlevé II equation and singularity formation for a localized induction approximation

Piotr Kokocki

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Classification of algebraic solutions of irregular Garnier systems

Karamoko Diarra, Frank Loray

<http://arxiv.org/abs/1808.09303>

Menon-type identities concerning additive characters

László Tóth

<http://arxiv.org/abs/1808.09674>

Modular forms and q -analogues of modified double zeta values

Henrik Bachmann

<http://arxiv.org/abs/1808.09855>

Generalizations of TASEP in discrete and continuous inhomogeneous space
Alisa Knizel, Leonid Petrov, Axel Saenz

<http://arxiv.org/abs/1808.10411>

Hermite functions, Lie groups and Fourier analysis
Enrico Celeghini, Manuel Gadella, Mariano A. del Olmo

<http://arxiv.org/abs/1808.10768>

On the distribution of values of the argument of the Riemann zeta function
Aleksandar Ivić, Maxim Korolev

Topic #6 ——— OP – SF Net 25.5 ——— September 15, 2018

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, or spost@hawaii.edu.

Contributions to OP–SF NET 25.6 should be sent by November 1, 2018.

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 (2017–2019) are:

Walter Van Assche, Chair
Andrei Martínez–Finkelshtein, Vice Chair
Sarah Post, Program Director
Yuan Xu, Secretary

The appointed officers are:

Howard Cohl, 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

Topic #7 ——— OP – SF Net 25.5 ——— September 15, 2018

From: OP–SF Net Editors

Subject: Thought of the Month by **Akshay Venkatesh**

A lot of the time when you do math, you're stuck, but at the same time there are all these moments where you feel privileged that you get to work with it. You have this sensation of transcendence, you feel like you've been part of something really meaningful.

Akshay Venkatesh upon receipt of the 2018 Fields Medal.