OP-SF NET – Volume 25, Number 3 – May 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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7. Thought of the Month by Hermann Weyl

Calendar of Events:

May 14–18, 2018
Workshop on Complex ODEs: Asymptotics, Orthogonal Polynomials and
Random Matrices, Random Matrices EurAsia–2018,
Pisa, Italy
http://www.crm.sns.it/event/429

June 21–24, 2018
Combinatory Analysis 2018
A Conference in Honor of George Andrews’ 80th Birthday
Pennsylvania State University, State College, PA
http://personal.psu.edu/jxs23/gebra80/

June 25–29, 2018
Orthogonal Polynomials and Special Functions Summer School (OPSF-S8)
Higher School of Sciences and Technology, Sousse University, Sousse, Tunisia
http://www.essths.rnu.tn/OPSF-S8/acceuil.html
July 3–6, 2018
VII Iberoamerican School on Orthogonal Polynomials and Applications (EIBPOA2018)  
Universidad Carlos III de Madrid, Leganés, Spain  
https://sites.google.com/site/eibpoa2018

July 8–13, 2018
IX Jaen Conference on Approximation Theory, Computer Aided Geometric Design,  
Numerical Methods and Applications, Dedicated to Professor Guillermo Lopez–Lagomasino on the occasion of his 70th birthday,  
Úbeda, Jaen, Spain  
http://www.ujaen.es/revista/jja/jca

July 25–August 15, 2018
Summer Research Institute on $q$–Series  
Nankai University, Tianjin, P. R. China  
http://www.combinatorics.net/q2018

August 14–17, 2018
International Conference on Orthogonal Polynomials and Holomorphic Dynamics (opds2018)  
Carlsberg Academy, Copenhagen, Denmark  
http://www.math.ku.dk/~henrikp/opds2018

September 2–15, 2018
Complex Differential and Difference Equations  
Banach Center, Będlewo, Poland  

October 5–12, 2018
AIMS–Volkswagen Stiftung Workshop on Introduction to Orthogonal Polynomials and Applications, Hotel Prince de Galles, Douala/Limbe, Cameroon  

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://side–conferences.net

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

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/
The ATTI Workshop, “Analysis, Approximation Theory, Operator Theory and their Interconnections” on the occasion of the 70th birthday of Paul Nevai and the 80th birthday of Boris Mityagin.

There was a workshop at The Ohio State University (March 13–16, 2018) on the occasion of the 70th birthday of Paul Nevai and the 80th birthday of Boris Mityagin. Most people will know Paul Nevai as one of the editors-in-chief of the Journal of Approximation Theory, but he is mostly one of the leading experts on orthogonal polynomials and his papers since the 1970’s have been very influential. Boris Mityagin is an expert in functional analysis and operator theory with applications in approximation theory. Since both had a long career at The Ohio State University, it was quite natural to celebrate them there.

Figure 1: On the picture are Andrei Martínez-Finkelshtein, Hrushikesh Mhaskar, Paul Nevai, Vilmos Totik, Barry Simon, Walter Van Assche, Kathy Driver, Jeff Geronimo, and Tamas Erdelyi (ignoring the waiter in the back); Photo Credit: Andrei Martínez-Finkelshtein.

The local organizers Jan Lang and Rodica Costin did a great job in getting a number of friends and international experts together. On the first day there were expository talks by Barry Simon (Szegő–Widom asymptotics for Chebyshev polynomials on subsets of $\mathbb{R}$), Doron Lubinsky (A walk through Paul’s garden) and myself (Non-linear recurrence relations, orthogonal polynomials and Painlevé equations) which were full of pointers to the work of Paul Nevai. Furthermore, Dorothee Haroske talked on “Some recent results about spaces of Morey type”, which was closer to Boris Mityagin’s research. The second day also had a few expository talks: Jeff Geronimo talked on “Orthogonal Polynomials on
the real line with recurrence coefficients decaying exponentially to their limits”, Vladimir Andrievskii’s talk was on “Polynomial approximation and polynomial inequalities in the complex plane”, Lubos Pick gave a very entertaining talk on “Rearrangement techniques, Sobolev embeddings and isoperimetric inequalities”, and Vilmos Totik gave an overview on “Paul Nevai’s work on orthogonal polynomials and Christoffel functions”. Both Paul and Boris were also given the opportunity to explain what they have been doing the past few decades and the audience certainly appreciated to hear both of them.

Amos Ron, another editor-in-chief of the Journal of Approximation Theory, opened the third day of the workshop with a talk on “Multivariate splines: old and new”. Kathy Driver then showed that “Zeros of Jacobi polynomials” is still a topic where interesting results can be found using various techniques. Andrea Cianchi added his part on operator theory with his talk on “Second-order two-sided estimates in nonlinear elliptic problems”, and Maxim Derevyagin returned to orthogonal polynomials with his view on “Szegő’s theorem for a nonclassical case”. In the afternoon we were served another expository talk on “Linearity: a person history” by Richard Aron, followed by Vladimir Peller with “A solution of M. G. Krein’s problem and absolute continuity of the spectral shift” and Hrushikesh Mhaskar who gave “Some applications of a Tauberian theorem”.

On the fourth and final day, we were given another nice mixture of Paul–Boris related topics. Andrei Martínez-Finkelshtein presented “Multiple non-Hermitian orthogonality and vector electrostatics: results, connections and problems”, and Maxim Yattselev, Anna Maltsev and Plamen Iliev explained their work on “Zeros of random polynomials spanned by orthogonal polynomials on the unit circle”, “Localization and landscape functions on quantum graphs” and “Bispectral problems, Lie theory and integrability”. The afternoon had the last expository talk “Approximation numbers of Sobolev embeddings” by Winfried Sickel, and the closing two talks by Tamas Erdélyi, who gave “A survey on some recent progress in the study of the Rudin–Shapiro polynomials” and Brian Simanek who closed with “Geronimus polynomials and Chebyshev polynomials”.

This workshop was a nice opportunity to see how mathematics has developed since the 1960’s–1970’s til now in the research area of Paul Nevai (orthogonal polynomials and approximation theory) and Boris Mityagin (functional analysis, operator theory and approximation) and how various new and exciting problems and interconnections are still getting a lot of attention by starting researchers.

Topic #2  ______  OP – SF Net 25.3  ______  May 15, 2018

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

Gábor Szegő Prize

We are now 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 committee can make exceptions, if in their opinion the candidate is at an
equivalent stage in their career.

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.

**Nomination Deadline:** October 15, 2018

**Required Materials:**

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

The list of selection committee members will be posted when it becomes available.

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**Topic #3**  
OP – SF Net 25.3  
May 15, 2018

From: OP–SF Net Editors  
Subject: Announcement: Webpage for OPSFA-15 in Linz, Austria, is now online

The webpage for OPSFA-15 is now online: [http://www.risc.jku.at/conferences/opsfa2019/](http://www.risc.jku.at/conferences/opsfa2019/).

The 15\textsuperscript{th} International Symposium on Orthogonal Polynomials, Special Functions and Applications (OPSFA’15) will take place in Hagenberg, Austria, at the Research Institute for Symbolic Computation (RISC) of the Johannes Kepler University Linz (JKU), July 22–26, 2019, with arrival day July 21, 2019.

Conferences in the OPSFA series provide a forum for mathematicians, physicists, and computational scientists to communicate recent research results in the areas of orthogonal polynomials and special functions. These play an essential role in analytical and computational investigations in applied mathematics.

This symposium is an event of the SIAM Activity Group on Orthogonal Polynomials and Special Functions. The activity group promotes basic research in orthogonal polynomials and special functions, as well as applications of this subject in other parts of mathematics, and in science and industry. It encourages and supports the exchange of information, ideas, and techniques between workers in this field and other mathematicians and scientists. The activity group also awards the Gábor Szegő Prize every two years to an early-career researcher for outstanding research contributions in the area of orthogonal polynomials and special functions.

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**Topic #4**  
OP – SF Net 25.3  
May 15, 2018

From: Mourad Ismail (mourad.eh.ismail@gmail.com)  
and Ruiming Zhang (ruimingzhang@yahoo.com)  
Subject: Announcement: Summer Research Institute on \(q\)-Series in Tianjin, China
Summer Research Institute on $q$-Series
Nankai University, Tianjin, P. R. China
July 25–August 15, 2018

Organizers:

Mourad Ismail, University of Central Florida
Ruiming Zhang, Northwest A&F University

Sponsors:

Center for Applied Mathematics, Tianjin University
Center for Combinatorics, Nankai University
Chern Institute of Mathematics, Nankai University

Invited Lecturers:

Kathrin Bringmann, University of Cologne
Subject: Modular Forms and Mock Theta Functions (5 hours)

Mourad Ismail, University of Central Florida
Subject: $q$-Series (3 hours)

Peter Paule, Johann Kepler University
Subject: Symbolic and Computer Algebra (4 hours)

Simon Ruijsenaars, University of Leeds
Subject: Mathematical Physics (2 hours)

Alexei Zhedanov, Renmin University of China
Subject: Mathematical Physics (2 hours)

Invited One Hour Speakers:

Krishnaswami Alladi, University of Florida
Dan Dai, City University of Hong Kong
Shishuo Fu, Chongqing University
Kathy Ji, Tianjin University
Christian Krattenthaler, University of Vienna
Zhiguo Liu, East China Normal University
Tuen Wai Ng, The University of Hong Kong
Pablo Roman, the National University of Cordoba
Jin Wang, Soochow University
Ole Warnaar, The University of Queensland
Ae Ja Yee, Penn State University
Zhi-Zheng Zhang, Luoyang Normal University

Topic #5       OP – SF Net 25.3       May 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 March and April 2018. This list has been separated into two categories.
Integrals in Gradshteyn and Ryzhik: Hyperbolic and trigonometric function
Mark W. Coffey

Coherent states for ladder operators of general order related to exceptional orthogonal polynomials
Scott E. Hoffmann, Véronique Hussin, Ian Marquette, Yao-Zhong Zhang

Fundamental solutions of generalized bi-axially symmetric multivariable Helmholtz equation
Tuhtasin Ergashev, Anvarjon Hasanov

A \( q \)-microscope for supercongruences
Victor J. W. Guo, Wadim Zudilin

A Joint Central Limit Theorem for the Sum-of-Digits Function, and Asymptotic Divisibility of Catalan–like Sequences
Michael Drmota, Christian Krattenthaler

The evaluation of infinite sums of products of Bessel functions
R. B. Paris

Dualities in the \( q \)-Askey scheme and degenerated DAHA
Tom H. Koornwinder, Marta Mazzocco

Modulus \( p^2 \) congruences involving harmonic numbers
Jizhen Yang, Yunpeng Wang

A summation formula for a \( 3 \, F_2 (1) \) hypergeometric series
R. B. Paris

Solutions of systems of the partial differential equations of Kampé de Fériet type functions
Anvarjon Hasanov, Tuhtasin Ergashev

Variations on a Hypergeometric Theme
Michael Milgram

A note on odd zeta values
Tanguy Rivoal, Wadim Zudilin
On some Hamiltonian properties of the isomonodromic tau functions
A. R. Its, A. Prokhorov

A curious class of Hankel determinants
Johann Cigler

Determinantal elliptic Selberg integrals
Hjalmar Rosengren

Fundamental solutions and Gegenbauer expansions of Helmholtz operators on Riemannian spaces of constant curvature
Howard S. Cohl, Thinh H. Dang, T. M. Dunster

Bounds for modified Struve functions of the first kind and their ratios
Robert E. Gaunt

Asymptotic expansions for the incomplete gamma function in the transition regions
Gergő Nemes, Adri B. Olde Daalhuis

On characters of $L_{sl_n}(-\Lambda_0)$-modules
Kathrin Bringmann, Karl Mahlburg, Antun Milas

Many odd zeta values are irrational
Stéphane Fischler, Johannes Sprang, Wadim Zudilin

On the Schur function expansion of a symmetric quasi–symmetric function
Ira M. Gessel

Asymptotic Bessel–function expansions for Legendre and Jacobi functions
Loyal Durand

Dual addition formula for continuous $q$–ultraspherical polynomials
Tom H. Koornwinder

Continuous and Discrete Painlevé IV from a Discontinuous Linear Statistic in the Gaussian Unitary Ensemble
Chao Min, Yang Chen
http://arxiv.org/abs/1803.10954
Gap Probability Distribution of the Jacobi Unitary Ensemble: An Elementary Treatment, from Finite $n$ to Double Scaling
Chao Min, Yang Chen

http://arxiv.org/abs/1803.11191
Approximation of the Boltzmann Collision Operator Based on Hermite Spectral Method
Yanli Wang, Zhenning Cai

http://arxiv.org/abs/1803.11321
On properties of a deformed Freud weight
Mengkun Zhu, Yang Chen

http://arxiv.org/abs/1804.00563
Large $z$ asymptotics for special function solutions of Painlevé II in the complex plane
Alfredo Deaño

http://arxiv.org/abs/1804.01323
Exceptional Jacobi polynomials
Niels Bonneux

http://arxiv.org/abs/1804.01420
On capacity computation for symmetric polygonal condensers
Sergei Bezrodnykh, Andrei Bogatyrev, Sergei Goreinov, Oleg Grigoriev, Harri Hakula, Matti Vuorinen

http://arxiv.org/abs/1804.01597
Counting with Borel’s Triangle
Yue Cai, Catherine Yan

http://arxiv.org/abs/1804.01616
Prime Parking Functions on Rooted Trees
Westin King, Catherine H. Yan

http://arxiv.org/abs/1804.02856
Discrete orthogonal polynomials with hypergeometric weights and Painlevé VI
Galina Filipuk, Walter Van Assche

http://arxiv.org/abs/1804.03173
On the increasing tritronquée solutions of the Painlevé–II equation
Peter D. Miller

http://arxiv.org/abs/1804.03701
Catalan functions and $k$–Schur positivity
Jonah Blasiak, Jennifer Morse, Anna Pun, Daniel Summers

http://arxiv.org/abs/1804.03801
Computing Integrals Involved the Gaussian Function with a Small Standard Deviation
Yunyun Ma, Yuesheng Xu

http://arxiv.org/abs/1804.03982
On the properties of special functions generating the kernels of certain integral operators
Dmitrii B. Karp, Yuri B. Melnikov, Irina V. Turuntaeva
http://arxiv.org/abs/1804.04129
Some hypergeometric integrals for linear forms in zeta values
Wadim Zudilin

http://arxiv.org/abs/1804.04296
Special values of \(q\)-gamma products
Tanay Wakhare

http://arxiv.org/abs/1804.06749
Asymptotic expansions of Jacobi polynomials for large values of \(\beta\) and of their zeros
Amparo Gil, Javier Segura, Nico M. Temme

http://arxiv.org/abs/1804.07076
Non-iterative computation of Gauss–Jacobi quadrature by asymptotic expansions for large degree
Amparo Gil, Javier Segura, Nico M. Temme

http://arxiv.org/abs/1804.07512
Jacobi–Angelesco multiple orthogonal polynomials on an \(r\)-star
Marjolein Leurs, Walter Van Assche

http://arxiv.org/abs/1804.07527
A note on an integral of Dixit, Roy and Zaharescu
R. B. Paris

http://arxiv.org/abs/1804.08762
Spectral approximation of convolution operator
Kuan Xu, Ana Loureiro

The Smallest Singular Values and Vector–Valued Jack Polynomials
Charles F. Dunkl

http://arxiv.org/abs/1804.09922
Arithmetic of Catalan’s constant and its relatives
Wadim Zudilin

http://arxiv.org/abs/1804.10144
Volterra–type convolution of classical polynomials
Ana F. Loureiro, Kuan Xu

**Other Relevant OP–SF E–Prints**

http://arxiv.org/abs/1803.00221
Inverse Values of the Riemann Zeta Function Tails
Donggyun Kim, Kyunghwan Song

http://arxiv.org/abs/1803.00336
A new and sharper bound for Legendre expansion of differentiable functions
Haiyong Wang
On large values of $L(\sigma, \chi)$
Christoph Aistleitner, Kamalakshya Mahatab, Marc Munsch, Alexandre Peyrot

Bellman Functions and Dimension Free $L^p$ estimates for the Riesz Transforms in Bessel settings
Jorge J. Betancor, Estefanía Dalmasso, Juan C. Fariña, Roberto Scotto

Radial basis function methods for optimal control of the convection–diffusion equation
Pedro González Casanova, Jorge Zavaleta

On Mittag–Leffler $d$–orthogonal polynomials and their $q$–analogues
Abdessadek Saib

Hirzebruch Functional Equation: Classification of Solutions
Elena Yu. Bunkova

Generalized solutions of the degenerate hyperbolic equation of the second kind with a spectral parameter
Tuhtasin Ergashev

The inversion formula for the Volterra integral equation with the Humbert function in the nuclear and its applications to the boundary value problems
Tuhtasin Ergashev

The Cauchy problem for a degenerate hyperbolic equation of the second kind
Tuhtasin Ergashev

Differential–recurrence properties of dual Bernstein polynomials
Filip Chudy, Paweł Woźny

Exponential Riordan arrays and generalized Narayana polynomials
E. Burlachenko

An infinite family of congruences arising from a second order mock theta function
Shane Chern, Chun Wang

Argyres–Douglas theories, Painlevé II and quantum mechanics
Alba Grassi, Jie Gu
A \( q \)-analogue for Euler’s \( \zeta(2k) = \frac{(-1)^{k+1}2^{2k}B_{2k} \pi^{2k}}{2(2k)!} \)

Ankush Goswami

The monotonicity rules for the ratio of two Laplace transforms with applications
Zhen-Hang Yang, Jing-Feng Tian

Staircases to analytic sum-sides for many new integer partition identities of Rogers–Ramanujan type
Shashank Kanade, Matthew C. Russell

Eigenvalues of Matrices whose Elements are Ramanujan Sums or Kloosterman Sums
Noboru Ushiroya

Umbral Calculus, a Different Mathematical Language
Silvia Licciardi

Transformation formulas and three-term relations for basic hypergeometric series
Yuka Suzuki

The radius of convergence of the Heun function
Yoon Seok Choun

Generalized Beta Function Defined by Wright Function
Enes Ata

A new generalization of beta function with three parameters Mittag–Leffler function
Muhammed Ay

Efficient method for fractional Lévy–Feller advection–dispersion equation using Jacobi polynomials
N. H. Sweilam, M. M. Abou Hasan

Integrable quad equations derived from the quantum Yang–Baxter equation
Andrew P. Kels

Rapidly converging formulae for \( \zeta(4k \pm 1) \)
Shubho Banerjee, Blake Wilkerson
Large values of Dirichlet $L$-functions inside the critical strip
Marc Munsch

Fast algorithms for Jacobi expansions via nonoscillatory phase functions
James Bremer, Haizhao Yang

Quadratic and symmetric bilinear forms over finite fields and their association schemes
Kai-Uwe Schmidt

The Matrix Bochner Problem
W. Riley Casper, Milen Yakimov

Explicit inverse of tridiagonal matrix with applications in autoregressive modeling
Linda S. L. Tan

Explicit tight bounds on the stably recoverable information for the inverse source problem
Mirza Karamehmedović

Stable source reconstruction from a finite number of measurements in the Multi–frequency Inverse Source Problem
Mirza Karamehmedović, Adrian Kirkeby, Kim Knudsen

On Computing Jacobi’s Elliptic Function $sn$
Ernest Scheiber

Fractional derivative of composite functions: exact results and physical applications
Gavriil Shchedrin, Nathan Smith, Anastasia Gladkina, Lincoln D. Carr

Translation operator with exceptional Laguerre polynomials
Á. P. Horváth

Weak limits for weighted means of orthogonal polynomials
Wolfgang Erb

Thermodynamics in the NC disc
S. A. Franchino–Viñas, P. Pisani

Closed form expressions for Appell polynomials
José A. Adell, Alberto Lekuona
The Graph Structure of Chebyshev Polynomials over Finite Fields and Applications
Claudio Qureshi, Daniel Panario

Fundamental group of non–singular locus of Lauricella’s $F_C$
Tomohide Terasoma

Explicit formula for the density of local times of Markov Jump Processes
Ruojun Huang, Daniel Kious, Vladas Sidoravicius, Pierre Tarrès

On the meromorphic continuation of Beatty Zeta–Functions and Sturmian Dirichlet series
Athanasiou Sourmelidou

Superconvergence Points of Integer and Fractional Derivatives of Special Hermite Interpolations and Its Applications in Solving FDEs
Beichuan Deng, Jiwei Zhang, Zhimin Zhang

Remarks on hypergeometric Bernoulli numbers
Miho Aoki, Takao Komatsu

Formulas for non–holomorphic Eisenstein series and for the Riemann zeta function at odd integers
Cormac O’Sullivan

The generating function of planar Eulerian orientations
Mireille Bousquet–Mélou, Andrew Elvey Price, Andrew Price

WZ pairs and $q$–Analogues of Ramanujan series for $1/\pi$ (with an appendix by Wadim Zudilin)
Jesus Guillera

Motivic correlators, cluster varieties and Zagier’s conjecture on $\zeta_F(4)$
Alexander B. Goncharov, Daniil Rudenko

On a generalization of restricted sum formula for multiple zeta values and finite multiple zeta values
Hideki Murahara, Takuya Murakami

Recursive formulas for $_2F_1$ and $_3F_2$ hypergeometric series
J. L. González–Santander
On partial evaluation of a continued fraction of Ramanujan and evaluations of hyperbolic series
Nikos Bagis

Extremal weight projectors II
Hoel Queffelec, Paul Wedrich

Asymptotic relation for zeros of cross–product of Bessel functions and applications
Vladimir Bobkov

The effect of repeated differentiation on \( L \)–functions
Jos Gunns, Christopher Hughes

Generalized Riemann Hypothesis and Stochastic Time Series
Giuseppe Mussardo, Andre LeClair

Aspects of Hecke Symmetry: Generalized Ramanujan Identities and a Universal Inversion Formula
Madhusudhan Raman

Generalized Eulerian Triangles and Some Special Production Matrices
Paul Barry

The \( \frac{1}{k} \)–Eulerian Polynomials as Moments, via Exponential Riordan Arrays
Paul Barry

Densities of bounded primes for hypergeometric series with rational parameters
Cameron Franc, Brandon Gill, Jason Goertzen, Jarrod Pas, Frankie Tu

Complementary Polynomials From Rodrigues’ Representations For Confluent And Hypergeometric Functions And More
H. J. Weber

\( p \)-adic hypergeometrics
Fernando Rodriguez Villegas

Hypergeometric supercongruences
David Roberts, Fernando Rodriguez Villegas
http://arxiv.org/abs/1803.10997
A seamless extension of DG methods for hyperbolic problems to unbounded domains
T.Benacchio, L.Bonaventura

http://arxiv.org/abs/1803.11230
Tronquee solutions of the third and fourth Painlevé equations
Xiaoyue Xia

http://arxiv.org/abs/1803.11281
Vertex Operator Algebras with Two Simple Modules – the Mathur–Mukhi–Sen Theorem Revisited
Geoffrey Mason, Kiyokazu Nagatomo, Yuichi Sakai

http://arxiv.org/abs/1803.11441
On an analog of the Arakawa–Kaneko zeta function and relations of some multiple zeta values
Ryota Umezawa

http://arxiv.org/abs/1804.00020
A short construction of the Zhu algebra
Jethro van Ekeren, Reimundo Heluani

http://arxiv.org/abs/1804.00343
Exponential moments of the argument of the Riemann zeta function on the critical line
Joseph Najnudel

http://arxiv.org/abs/1804.00366
Relative twisted homology and cohomology groups associated with Lauricella’s $F_D$
Keiji Matsumoto

http://arxiv.org/abs/1804.00580
An addition formula for the Jacobian theta function with applications
Bing He, Hongcun Zhai

Further results on Andrews–Yee’s two identities for mock theta functions $\omega(z;q)$ and $\nu(z;q)$
Jin Wang, Xinrong Ma

http://arxiv.org/abs/1804.00851
Mean convergence of prolate spheroidal series and their extensions
Mourad Boulsane, Philippe Jaming, Ahmed Souabni

http://arxiv.org/abs/1804.00913
Contributions to the study of the non-trivial roots of the Riemann zeta–function
Dimitris Vartziotis, Juri Merger

http://arxiv.org/abs/1804.01007
On evaluation of the confluent Heun functions
Oleg V. Motygin

http://arxiv.org/abs/1804.01198
New recursive approximations for variable–order fractional operators with applications
M. A. Zaky, E. H. Doha, T. M. Taha, D. Baleanu
Hobson's formula for Dunkl operators and its applications
Nobukazu Shimeno

Multi-dimensional $q$-summations and multi-colored partitions
Shane Chern, Shishuo Fu, Dazhao Tang

Frobenius determinants and Bessel Functions
Ahmed Sebbar, Oumar Wone

On analytic properties of Meixner–Sobolev orthogonal polynomials of higher order difference operators
A. Soria–Lorente, Jean–Marie Vilaire

Proofs of some Ramanujan series for $1/\pi$ using a Zeilberger’s program
Jesús Guillera

Sharp upper bound for a quantity in the convergence analysis of smoothed aggregation algebraic multigrid
Xuefeng Xu, Chen–Song Zhang

Comment on “Effects of cosmic-string framework on the thermodynamical properties of anharmonic oscillator using the ordinary statistics and the $q$–deformed superstatistics approaches”
Francisco A. Cruz Neto, Luis B. Castro

Lie Symmetry Analysis of Some Conformable Fractional Partial Differential Equations
B. A. Tayyan, A. H. Sakka

On random polynomials generated by a symmetric three–term recurrence relation
Abey López García, Vasilii A. Prokhorov

Limit theorems for multivariate Bessel processes in the freezing regime
Sergio Andraus, Michael Voit

GUE–chGUE Transition preserving Chirality at finite Matrix Size
Takuya Kanazawa, Mario Kieburg

On fundamental solutions for multidimensional Helmholtz equation with three singular coefficients
Tuhtasin Ergashev
The admissible domain of the non-trivial zeros of the Riemann zeta function
Yuri Heymann

New method of computing prolate spheroidal wavefunctions and bandlimited extrapolation: A general approach to bandlimited Fredholm kernels
Vishal Vaibhav

Generalised Sobolev Stable Flux Reconstruction
Will Trojak

Remarks on irregular conformal blocks and Painlevé III and II tau functions
Hajime Nagoya

The $p$–adic Gelfand–Kapranov–Zelevinsky hypergeometric complex
Lei Fu, Daqing Wan, Hao Zhang

An explicit Formula for Bernoulli Polynomials with a $q$ Parameter in Terms of $r$–Whitney Numbers
F. A. Shiha

A Polynomial Chaos Expansion in Dependent Random Variables
Sharif Rahman

Applications of Integer and Semi–Infinite Programming to the Integer Chebyshev Problem
Kevin G. Hare, Philip W. Hodges

Cubic hypergeometric integrals of motion in affine Gaudin models
Sylvain Lacroix, Benoit Vicedo, Charles A. S. Young

Operator limits of random matrices
Balint Virag

The generalized Whittaker function for quaternionic discrete series on exceptional and orthogonal groups
Aaron Pollack

Sharp Approximations for the Ramanujan Constant
Song–Liang Qiu, Xiao–Yan Ma, Ti–Ren Huang
http://arxiv.org/abs/1804.07936
The Lerch zeta function as a fractional derivative
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http://arxiv.org/abs/1804.07994
Macdonald denominators for affine root systems, orthogonal theta functions, and elliptic
determinantal point processes
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Two $q$–summation formulas and $q$–Analogues for Ramanujan–type series
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http://arxiv.org/abs/1804.08448
On Asymptotic Formula for the First Moment of the Riemann Zeta–Function on the Critical
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A symmetric formula for hypergeometric series
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http://arxiv.org/abs/1804.08826
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http://arxiv.org/abs/1804.09966
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http://arxiv.org/abs/1804.10320
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http://arxiv.org/abs/1804.10341
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Anton Dzhamay, Tomoyuki Takenawa

http://arxiv.org/abs/1804.10352
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Shun Shimomura

Summation formulas for Fox–Wright function
Chuanan Wei, Lily Li Liu, Dianxuan Gong

Meixner $d$–Orthogonal Polynomials Arising from $\mathfrak{su}(1, 1)$
Fethi Bouzeffour, Borhen Halouani, Mubariz T Garayev

Truncated solutions of Painlevé equation $P_V$
Rodica D. Costin

Topic #6 ------- OP–SF Net 25.3 ------- May 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 25.4 should be sent by July 1, 2018.

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