O P-S F N E T – Volume 23, Number 6 – November 15, 2016

Editors:
   Howard S. Cohl   howard.cohl@nist.gov
   Kerstin Jordaan   kerstin.jordaan@up.ac.za
   Sarah Post   spost@hawaii.edu

Topics:

1. Report on Barry Simon's 70th Birthday Conferences
2. New edition of Beals & Wong: "Special Functions and Orthogonal Polynomials"
3. "WHAT IS... A Multiple Orthogonal Polynomial" in Notices of the AMS
4. Obituary for Evangelos K. Ifantis, 1934–2016
5. Obituary for Jacek Gilewicz, 1937–2016
6. Preprints in arXiv.org
7. About the Activity Group
8. Submitting contributions to OP-SF NET and SIAM-OPSF (OP-SF Talk)

Calendar of Events:

November 16–17, 2016
   Workshop on Orthogonal Polynomials and Special Functions,
   The H.C. Ørsted Institute (HCØ), University of Copenhagen, Denmark
   http://www.math.ku.dk/~henrikp/w2016

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

January 4–7, 2017
   2017 Joint Mathematics Meetings, American Mathematical Society,
   Hyatt Regency Atlanta and Marriott Atlanta Marquis, Atlanta, Georgia, USA

   AMS Special Session on Orthogonal Polynomials,
    Organized by Doron Lubinsky and Jeff Geronimo,
    http://jointmathematicsmeetings.org/meetings/national/jmm2017/2180_program_ss17.html

AMS Special Session on Symmetries, Integrability, and Beyond,
 Organized by Maria Clara Nucci and Sarah Post,
 http://jointmathematicsmeetings.org/meetings/national/jmm2017/2180_program_ss61.html

AMS Special Session on Continued Fractions,
 Organized by James McLaughlin, Geremías Polanco and Nancy J. Wyshinski,
 http://jointmathematicsmeetings.org/meetings/national/jmm2017/2180_program_ss38.html

AMS Special Session on Complex Analysis and Special Functions.,
 Organized by Brock Williams, Kendall Richards and Alex Solynin,
 http://jointmathematicsmeetings.org/meetings/national/jmm2017/2180_program_ss40.html

January 30–February 3, 2017
Biennial Congress of the Royal Spanish Mathematical Society
University of Zaragoza, Zaragoza, Spain
http://eventos.rsme.es/go/zgz2017.html
Special session on Special functions, orthogonal polynomials and applications,
 Organized by Manuel Alfaro and Antonio Durán,
 http://eventos.rsme.es/4762/section/4405/congreso-bienal-de-la-real-sociedad-matematica-espanola.html

March 20–24, 2017
Elliptic Hypergeometric Functions in Combinatorics, Integrable Systems and Physics
Erwin Schrödinger Institute, Vienna, Austria
http://www.esi.ac.at/activities/events/2017/elliptic-hypergeometric-functions

May 9–12, 2017
The VI Iberoamerican Workshop on Orthogonal Polynomials and Applications (EIBPOA 2017)
Universidade Federal do Triângulo Mineiro, Uberaba, MG, Brazil
http://eibpoa2017.weebly.com

June 26–30, 2017
OPSF–S7 Summer School on Orthogonal Polynomials and Special Functions,
University of Kent, Canterbury, UK
https://blogs.kent.ac.uk/opsf-summerschool

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://cmft2017.umcs.lublin.pl

July 10–19, 2017
Foundations of Computational Mathematics,
Barcelona, Spain
http://www.ub.edu/focm2017/index.html

From: Andrei Martínez-Finkelshtein (andrei@ual.es)
Subject: Report on Barry Simon's 70th Birthday Conferences

Two consecutive events took place in Canada in the second half of August 2016, as part of Barry Simon's 70th birthday celebration. Barry is one of the founding fathers of modern mathematical physics. His interests span a vast number of topics and his influence, through research papers, books and mentoring skills, is felt in many areas of mathematics. He has made significant contributions over the years to quantum field theory, statistical mechanics, Schrödinger operators, to the theory of orthogonal polynomials, and the list is not complete.

First, honoring his remarkable dedication to the advancement of young mathematical physicists, a Young Researchers Symposium "Methods of Modern Mathematical Physics" covering several areas of mathematical physics took place at the Fields Institute in Toronto, Canada, on August, 22–26, 2016. There were 120 registered participants, most of whom were students, postdocs and junior faculty members from all over the world.

Distinct topics were covered in five days; the opening talks were given by scientific leaders, who also acted as moderators, and were mostly of an introductory character. The topics and moderators (Monday to Friday schedule) matched some of the fields of interest of Barry Simon, mentioned above:

- Robert Seiringer (IST Austria), Bose–Einstein condensation;
- Rupert Frank (Caltech), Many–body quantum mechanics;
- Laszlo Erdös (IST Austria), Random matrices and random Schrödinger operators;
- Jacob S. Christiansen (Lund), Orthogonal polynomials;
- Svetlana Jitomirskaya (UC Irvine), Spectral theory of quasi–periodic operators.

There were two one hour lectures on Mathematical Methods in Many–Body Quantum Mechanics (I & II) by Mathieu Lewin, from CNRS & University Paris–Dauphine, and three "Short Introductions": to Random Matrices by Laszlo Erdös, from IST Austria; to Orthogonal Polynomials, by Jacob S. Christiansen, from Lund University; and finally, to the quasi–periodic session, by Svetlana Jitomirskaya, UC Irvine. These opening lectures were especially helpful for non–specialists to be able to follow the approximately 40 talks of junior researchers and a discussion of open problems.

The Orthogonal Polynomials session consisted of 7 talks (besides Jacob Christiansen's introduction), by Jonathan Breuer ("Perturbation theory for Jacobi matrices and mesoscopic fluctuations for random matrix ensembles"), Rostyslav Kozhan ("Rank–one additive and multiplicative non–Hermitian perturbations of Hermitian matrices"), Karl Liechty ("Propagation of critical behavior for unitary invariant plus GUE random matrices"), Wolter Groenevelt ("Pseudo big q–Jacobi polynomials"), Brian Simanek ("Zeros of optimal polynomial approximants"), Maxim Zinchenko ("Asymptotics of orthogonal and Chebyshev polynomials on Cantor Sets"), Milivoje Lukic ("Higher order Szegő theorems"), and Serguei Denissov ("Orthogonal polynomials on the circle for the weight w satisfying the conditions: w, $w^{-1} \in \mathrm{BMO}(\mathbb{T})$"). The last hour was devoted to an Open Problem session, coordinated by Andrei Martínez-Finkelshtein. Videos of the talks are available at http://www.fields.utoronto.ca/activities/16–17/modern–physics.

Many of the participants at the Toronto meeting also attended the second event, Conference on "Frontiers in Mathematical Physics" that took place at CRM in Montreal the

following week. This time the goal was to bring together leading researchers in mathematical physics, with the purpose of outlining recent advances and new directions of research. There was a total of 160 registered participants. Some of the moderators at the Toronto meeting gave talks, together with other researchers representing several fields, a total of 19 invited speakers. Many of them took advantage of their talks to tell some stories featuring Barry. More stories were told during the conference banquet (you can see a video at http://www.crm.umontreal.ca/2016/Simon16/conferencier_e.php).

The talks spanned again the broad spectrum (pun intended) of Barry's interests. There was some mathematical physics (Jürg Fröhlich, Israel Michael Sigal, Abel Klein, Rupert Frank, Elliott Lieb, and Robert Seiringer), random matrices and stochastic processes (Horng-Tzer Yau, László Erdös, Martin Hairer, Alexei Borodin, Herbert Spohn, Percy Deift and Thomas Spencer) and spectral theory (Fritz Gesztesy, Svetlana Jitomirskaya). The orthogonal polynomials were also present through the talks by Doron Lubinsky ("Barrycentric asymptotics for orthonormal polynomials and their progeny") and Andrei Martínez-Finkelshtein ("Do polynomials dream of quadratic differentials?").

The organization of both events and the facilities at the venues were superb. Although the schedule of lectures was dense, there were no parallel sessions, which allowed the participants to attend any lecture they wished. Those of us who know Barry Simon were not surprised that he attended all the lectures from both conferences, actively contributing with questions and remarks.

The conferences were sponsored by several organizations. George Hagedorn, from Virginia Tech, did a great job coordinating the application for an AMS grant, which was used to support junior people from the USA.

The local organizers, whose hard work and dedication were essential to the flawless running of the events, deserve special mention, in particular, Vojkan Jaksic, from McGill University, who was the driving force behind the meetings that were such a success.

Topic #2 ——— OP - SF Net 23.6 ——— November 15, 2016

From: Tom Koornwinder (T.H.Koornwinder@uva.nl)
Subject: New edition of Beals & Wong: "Special Functions and Orthogonal Polynomials"

A new edition of the textbook "Special Functions and Orthogonal Polynomials" (by Richard Beals, Yale University and Roderick Wong, City University of Hong Kong), was published in May 2016.

This monograph is part of the Cambridge University Press series *Cambridge Studies in Ad-*

vanced Mathematics and it replaces the previous title "Special Functions: A Graduate Text" which was reviewed in OP-SF Net 18.5, Topic #6. The change in title reflects expanded material on orthogonal polynomials including their asymptotics. As in the original edition, the book serves as a self-contained reference for special functions, giving a unified framework, coherent motivations, and clear proofs for their main results. Both basic and more extended topics are covered in this new edition which includes chapters on both the Meijer G-function and Painlevé transcendents. The new edition will be reviewed in a forthcoming issue of OP-SF Net.

More information is available on the following website.

Topic #3 ——— OP – SF Net 23.6 ——— November 15, 2016

From: Kerstin Jordaan (Kerstin.Jordaan@up.ac.za)
Subject: "WHAT IS... A Multiple Orthogonal Polynomial" in Notices of the AMS

An article, "WHAT IS... A Multiple Orthogonal Polynomial," by Andrei Martínez-Finkelshtein and Walter Van Assche, appeared in the Graduate Student Section of the October 2016 Edition of Notices of the American Mathematical Society on p. 1029. This article is available at: http://www.ams.org/publications/journals/notices/201609/rnoti-p1029.pdf.

Topic #4 ——— OP – SF Net 23.6 ——— November 15, 2016

From: Chrysi G. Kokologiannaki (chrykok@math.upatras.gr) and Eugenia N. Petropoulou
  (jenpetr@upatras.gr)
Subject: Obituary for Evangelos K. Ifantis, 1934–2016

Professor Evangelos K. Ifantis died on 30 October 2016. His funeral took place in Athens, Greece, on 31 October 2016.

Professor Ifantis was born in the village of Palamas in Thessaly, central Greece, 81 years ago. At his birthplace he received elementary education, but finished high school in the city of Karditsa of the same area. He received his diploma in mathematics from the University of Athens in 1959 and prepared his Ph.D. thesis at the Center of High Physical Studies and Philosophy of Science at the former Nuclear Research Center "Democritus". He received his Ph.D. from the University of Athens in 1969. He was elected in 1974 professor at the chair "Mathematics for Physicists" of the School of Natural Sciences of the University of Patras and he was among the first professors who were employed at the University of Patras. From 1981 until 2002 he served the Department of Mathematics of the University of Patras. He retired in September 2002, after 28 years of academic service. In July 2002, his collaborators and students Panayiotis D. Siafarikas, Chrysi G. Kokologiannaki and Eugenia N. Petropoulou, organized at the University of Patras the "International Conference on Differential, Difference Equations and their Applications", on the occasion of his retirement. In this conference, 101 scientists participated from 26 countries. Soon after his retirement he became Professor Emeritus of the Department of Mathematics of the University of Patras. He leaves behind his wife Eleni, their two daughters, Klairi and Konstantina and his grandson Thanasi.

The research interests of Professor Ifantis covered many areas of mathematics including difference equations, zeros of analytic functions, differential and functional differential

equations, zeros of Bessel functions and mixed Bessel functions, zeros of orthogonal polynomials, variation of eigenvalues and eigenvectors when they depend on a real parameter, analytic theory of continued fractions, study of tridiagonal operators and solutions of lattices. He was the author or coauthor of more than 50 research papers and his work has received more than 500 citations.

Professor Ifantis was an excellent teacher, but most of all he was a good, respectable and honest person. He didn't just teach us science, he didn't just guide our first footsteps in research, but he above all taught us how to be better people. We, his students and collaborators, will always remember him with love and affection and will be grateful for everything that he has taught and offered us.

Topic #5 ——— OP – SF Net 23.6 ——— November 15, 2016

From: Bernd Beckermann (Bernhard.Beckermann@univ-lille1.fr), Alexander Aptekarev (aptekaa@gmail.com) and Valery Kalyagin (vkalyagin@hse.ru)
Subject: Obituary for Jacek Gilewicz, 1937–2016

On November 1, 2016, Jacek Gilewicz passed away at the age of 79 years. Jacek was born on September 10, 1937 in the city of Warsaw, Poland. He lost his parents during the war, and was raised by his aunts. Always a good student, he has won a prize in the Polish competition of the Mathematical Olympiad in 1955/56, namely visiting France for harvesting wine grapes. Having finally succeeded in the difficult task of obtaining the visa, he learned that a strong hailstorm had destroyed all the grapes that year but, adventurous as he was, he decided to interrupt his studies and visit France for a year.

Jacek graduated in Theoretical Physics at Warsaw University in 1961, and defended his Thèse d'État at Provence University in Marseille in 1977, with Marcel Froissart and Claude Brezinski being members of his jury. Subsequently, he obtained his Habilitation in Mathematics at Paris 7 University in 1985. After having worked until 1963 as Associate Professor at the Polish Academy of Sciences, he arrived in France, and held several research positions in Paris and at the CEA (Commissariat à l'Énergie Atomique et aux Énergies Alternatives) in Marseille. In 1973 he held an Associate Professor position at Provence University, and in 1975 he became Professor in Mathematics at the Université de Toulon in France, from which he retired in 2006. Jacek was also affiliated with the Centre de Physique Théorique in Marseille. In 2008 he was decorated as "Officier dans l'Ordre des Palmes Académiques". Jacek is survived by his wife Michèle, and by his three children and their families.

Jacek's scientific contributions include various topics in Approximation Theory, and in particular in Rational Approximation where he was interested lately in the Error of Approximation of Stieltjes Functions and in the Effect of Random Noise on the underlying power series of Padé approximants, or in Birth and Death Processes. He also contributed to the more abstract field of Co-Convex Approximation.

Most of the OP-SF community might know Jacek from his seminal book "Approximants de Padé" or as a co-organizer of the ninth OPSFA meeting at Luminy, France in 2007. He also edited two books containing the proceedings of the "First French–Polish Meeting on Padé Approximation and Convergence Acceleration Techniques" taking place in Warsaw in 1981, and the proceedings of the meeting on "Rational Approximation and its Applications in Mathematics and Physics" in Łańcut, Poland, 1987.

Jacek always stayed in contact with numerous colleagues in eastern Europe, from Poland, Ukraine and Russia, especially during the difficult period where there was only little financial support for research. He was an active member of the "Formation-Recherche" PhD network in 1997–2000 with participation of different French and Russian Universities and Research Institutions. His hospitality and help with visitors was unforgettable and by this he contributed to the academic achievements of many young mathematicians.

Jacek Gilewicz was not only curious about mathematics and a "bon vivant", but also a remarkable human being: he was always concerned about those that surrounded him, and shared his good mood with them. Jacek was a great friend, and people were drawn to him. He had a lot of friends from all over the world, and he was extremely loyal and thoughtful of his friends. He will forever remain in their hearts.

This obituary was prepared by Alexander Aptekarev, Bernd Beckermann and Valery Kalyagin, with help of Marek Gilewicz.

Topic #6 ——— OP – SF Net 23.6 ——— November 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 September and October 2016.

http://arxiv.org/abs/1609.00027
The Riemann zeta function and Gaussian multiplicative chaos: statistics on the critical line
Eero Saksman, Christian Webb

http://arxiv.org/abs/1609.00111
Jacobian elliptic Kummer surfaces and special function identities
Elise Griffin, Andreas Malmendier

http://arxiv.org/abs/1609.00244
On monodromy eigenfunctions of Heun equations and boundaries of phase-lock areas in a model of overdamped Josephson effect
Victor M. Buchstaber, Alexey A. Glutsyuk

http://arxiv.org/abs/1609.00495
An algebraic proof for the Umemura polynomials for the third Painlevé equation
Peter A. Clarkson, Chun-Kong Law, Chia-Hua Lin

http://arxiv.org/abs/1609.00715
Rarefied elliptic hypergeometric functions
V.P. Spiridonov

http://arxiv.org/abs/1609.00829
Efficient computation of Laguerre polynomials
A. Gil, J. Segura, N. M. Temme

http://arxiv.org/abs/1609.00891
Prolate Spheroidal Wave Functions Associated with the Quaternionic Fourier Transform
Cuiming Zou, Kit Ian Kou, Joao Morais

http://arxiv.org/abs/1609.01197
Interpolation of q-analogue of multiple zeta and zeta-star values
Noriko Wakabayashi

http://arxiv.org/abs/1609.01224
r-Tuple Error Functions and Indefinite Theta Series of Higher-Depth
Caner Nazaroglu

http://arxiv.org/abs/1609.01362
On the sum relation of multiple Hurwitz zeta functions
Chan-Liang Chung

http://arxiv.org/abs/1609.01898
Representing derivatives of Chebyshev polynomials by Chebyshev polynomials
Helmut Prodinger

http://arxiv.org/abs/1609.02166
Planar harmonic and monogenic polynomials of type A
Charles F. Dunkl

http://arxiv.org/abs/1609.02301
On Riemann's Paper, "On the Number of Primes Less Than a Given Magnitude"
W. Dittrich

http://arxiv.org/abs/1609.02340
Representations of hypergeometric functions for arbitrary parameter values and their use
D. Karp, J.L. López

http://arxiv.org/abs/1609.02384
Multiple elliptic gamma functions associated to cones
Jacob Winding

http://arxiv.org/abs/1609.02494
Painlevé IV: roots and zeros
P.L. Robinson

http://arxiv.org/abs/1609.02525
Series solutions of the non-stationary Heun equation
Farrokh Atai, Edwin Langmann

http://arxiv.org/abs/1609.02539
A quadratic divisor problem and moments of the Riemann zeta-function
Sandro Bettin, H. M. Bui, Xiannan Li, Maksym Radziwiłł

http://arxiv.org/abs/1609.02588
Josef Meixner: his life and his polynomials
Paul L. Butzer, Tom H. Koornwinder

http://arxiv.org/abs/1609.02803
Square Series Generating Function Transformations
Maxie D. Schmidt

http://arxiv.org/abs/1609.02827
Uniform Asymptotic Expansion for the Incomplete Beta Function
Gergő Nemes, Adri B. Olde Daalhuis

http://arxiv.org/abs/1609.03036
New series representations for zeta numbers using polylogarithmic identities in combi-
nation with a polynomial description of Bernoulli numbers
J. Braun, D. Romberger, H. J. Bentz

http://arxiv.org/abs/1609.03128
On parking functions and the zeta map in types B,C and D
Robin Sulzgruber, Marko Thiel

http://arxiv.org/abs/1609.03216
The Gaussian coefficient revisited
Richard Ehrenborg, Margaret A. Readdy

http://arxiv.org/abs/1609.03501
Tensor diagrams and Chebyshev polynomials
Lisa Lamberti

http://arxiv.org/abs/1609.03660
Algebraic independence results for values of Jacobi theta-constants
Carsten Elsner, Yohei Tachiya

http://arxiv.org/abs/1609.03682
On asymptotic approximations to the log-Gamma and Riemann-Siegel theta functions
Richard P. Brent

http://arxiv.org/abs/1609.03917
2D 2nd order Laplace superintegrable systems, Heun equations, QES and Bocher contrac-
tions
M.A. Escobar-Ruiz, E. G. Kalnins, W. Miller Jr

http://arxiv.org/abs/1609.04587
Inverse Problems of a Fractional Differential Equation with Bessel Operator
Fatma Al-Musalhi, Nasser Al-Salti, Sebti Kerbal

http://arxiv.org/abs/1609.04616
On resolvent matrix, Dyukarev-Stieltjes parameters and orthogonal matrix polynomials
via $[0, \infty)$-Stieltjes transformed sequences
Abdon Eddy Choque-Rivero, Conrad Mädler

http://arxiv.org/abs/1609.04792
Special functions and twisted L-series
Bruno Anglès, Tuan Ngo Dac, Floric Tavares Ribeiro

http://arxiv.org/abs/1609.04795
Further Exploration of Riemann's Functional Equation
Michael Milgram

http://arxiv.org/abs/1609.04974
On the tenth-order mock theta functions
Eric T. Mortenson

http://arxiv.org/abs/1609.05185
Wild monodromy action on the character variety of the fifth Painleve equation
Martin Klimes

http://arxiv.org/abs/1609.05263
Four-dimensional Painlevé-type equations associated with ramified linear equations II: Sasano systems
Hiroshi Kawakami

http://arxiv.org/abs/1609.05324
Truncated Product Representations for L-Functions in the Hyperelliptic Ensemble
J.C. Andrade, S.M. Gonek, J.P. Keating

http://arxiv.org/abs/1609.05515
Best polynomial approximation on the unit ball
Miguel Pinar, Yuan Xu

http://arxiv.org/abs/1609.05557
Multiple polylogarithms in weight 4
Herbert Gangl

http://arxiv.org/abs/1609.05658
Integrals of products of Hurwitz zeta functions via Feynman parametrization and two double sums of Riemann zeta functions
M. A. Shpot, R. B. Paris

http://arxiv.org/abs/1609.05696
k-Hilfer-Prabhakar Fractional Derivatives and Applications
S. K. Panchal, Amol D. Khandagale, Pravinkumar V. Dole

http://arxiv.org/abs/1609.05778
On Chudnovsky-Ramanujan Type Formulae
Imin Chen, Gleb Glebov

http://arxiv.org/abs/1609.05781
QES extension of Calogero model associated with exceptional orthogonal polynomials
B. Basu-Mallick, Bhabani Prasad Mandal, Pinaki Roy

http://arxiv.org/abs/1609.05863
Multiple zeta values and Euler sums
Ce Xu

http://arxiv.org/abs/1609.05965
Dynamic behavior of the roots of the Taylor polynomials of the Riemann xi function with growing degree
Robert Jenkins, Ken D. T.-R. McLaughlin

http://arxiv.org/abs/1609.06098
A fully diagonalized spectral method using generalized Laguerre functions on the half line
Fu-jun Liu, Zhong-qing Wang, Huiyuan Li

http://arxiv.org/abs/1609.06151
Vector orthogonal polynomials with Bochner's property
Emil Horozov

http://arxiv.org/abs/1609.06157
Generalized Gould–Hopper polynomials
Emil Horozov

http://arxiv.org/abs/1609.06473
Explicit formulas for enumeration of lattice paths: basketball and the kernel method
Cyril Banderier, Christian Krattenthaler, Alan Krinik, Dmitry Kruchinin, Vladimir Kruchinin, David Tuan Nguyen, Michael Wallner

http://arxiv.org/abs/1609.06679
A Neumann series of Bessel functions representation for solutions of perturbed Bessel equations
Vladislav V. Kravchenko, Sergii M. Torba, Raúl Castillo-Pérez

http://arxiv.org/abs/1609.06733
A note on Wall's modification of the Schur algorithm and linear pencils of Jacobi matrices
Maxim Derevyagin

http://arxiv.org/abs/1609.06829
Summation identities and transformations for hypergeometric series
Rupam Barman, Neelam Saikia

http://arxiv.org/abs/1609.06895
Short proofs for q-Raabe formula and integrals for Jacobi theta functions
Mohamed El Bachraoui

http://arxiv.org/abs/1609.06950
The Hilbert function of bigraded algebras in $k[\mathbb{P}^1 \times \mathbb{P}^1]$
Giuseppe Favacchio

http://arxiv.org/abs/1609.06971
The Dirichlet Series for the Liouville Function and the Riemann Hypothesis
K. Eswaran

http://arxiv.org/abs/1609.07166
Painlevé II transcendents and their squares
P.L. Robinson

http://arxiv.org/abs/1609.07276
Hypergeometric modular equations
Shaun Cooper, Wadim Zudilin

http://arxiv.org/abs/1609.07291
Spectral accuracy for the Hahn polynomials
René Goertz, Philipp Öffner

http://arxiv.org/abs/1609.08006
Hermite Calculus
G. Dattoli, B. Germano, S. Licciardi, M. R. Martinelli

http://arxiv.org/abs/1609.08365
Asymptotics of a Gauss hypergeometric function with large parameters, III: Application to the Legendre functions of large imaginary order and real degree
R.B. Paris

http://arxiv.org/abs/1609.08539
Shifted Chebyshev polynomials for Solving Three-Dimensional Volterra Integral Equations of the second kind
Doaa Shokry Mohamed

http://arxiv.org/abs/1609.08561
Formulas for Generalized Two-Qubit Separability Probabilities
Paul B. Slater

http://arxiv.org/abs/1609.08575
Painlevé IV and a third-order viewpoint
P.L. Robinson

http://arxiv.org/abs/1609.08743
Inequalities for Zero-Balanced Gaussian hypergeometric function
Ti-Ren Huang, Xiao-Yan Ma, Xiao-Hui Zhang

http://arxiv.org/abs/1609.08826
On Sums Involving Fourier Coefficients of Maass Forms for $SL(3, \mathbb{Z})$
Jesse Jääsaari, Esa V. Vesalainen

http://arxiv.org/abs/1609.08873
A sum-shuffle formula for zeta values in Tate algebras
Federico Pellarin

http://arxiv.org/abs/1609.09096
Matrix models for multilevel Heckman-Opdam and multivariate Bessel measures
Yi Sun

http://arxiv.org/abs/1609.09133
Analysis of the p-adic q-Volkenborn Integrals: an approach to Apostol-type special numbers and polynomials
Yilmaz Simsek

http://arxiv.org/abs/1609.09168
Finite multiple zeta values associated with 2-colored rooted trees
Masataka Ono

http://arxiv.org/abs/1609.09182
Double shuffle relations for q-analogues of multiple zeta values, their derivatives and the connection to multiple Eisenstein series
Henrik Bachmann

http://arxiv.org/abs/1609.09263
Meixner class of orthogonal polynomials of a non-commutative monotone Levy noise
Eugene Lytvynov, Irina Rodionova

http://arxiv.org/abs/1609.09293
Jacob's ladders, interactions between ζ-oscillating systems and ζ-analogue of an elementary trigonometric identity
Jan Moser

http://arxiv.org/abs/1609.09319
Criterion for the integrality of hypergeometric series with parameters from quadratic fields
Shaofang Hong, Chunlin Wang

http://arxiv.org/abs/1609.09336
On the integral of products of higher-order Bernoulli and Euler polynomials
M. Cihat Dagli, Mümün Can

http://arxiv.org/abs/1609.09842
Algebraic functions with Fermat property, eigenvalues of transfer operator and Riemann zeros, and other open problems
Giedrius Alkauskas

http://arxiv.org/abs/1610.00098
Explicit formulas for the Dunkl dihedral kernel and the (κ, a)-generalized Fourier kernel
Denis Constales, Hendrik De Bie, Pan Lian

http://arxiv.org/abs/1610.00225
Quantizing Weierstrass
Vincent Bouchard, Nitin K. Chidambaram, Tyler Dauphinee

http://arxiv.org/abs/1610.00540
K-theory of semi-linear endomorphisms via the Riemann-Hilbert correspondence
Oliver Braunling

http://arxiv.org/abs/1610.00742
Computing motivic zeta functions on log smooth models
Emmanuel Bultot, Johannes Nicaise

http://arxiv.org/abs/1610.01253
Some bivariate stochastic models arising from group representation theory
Manuel D. de la Iglesia, Pablo Román

http://arxiv.org/abs/1610.01257
Deformation of matrix-valued orthogonal polynomials related to Gelfand pairs
Maarten van Pruijssen, Pablo Román

http://arxiv.org/abs/1610.01299
Unitary monodromy implies the smoothness along the real axis for some Painlevé VI equation, I
Zhijie Chen, Ting-Jung Kuo, Chang-Shou Lin

http://arxiv.org/abs/1610.01317
Some remarks on the differences between ordinates of consecutive zeta zeros
Aleksandar Ivić

http://arxiv.org/abs/1610.01491
On Volterra functions and Ramanujan integrals
Roberto Garrappa, Francesco Mainardi

http://arxiv.org/abs/1610.01557
Elliptic hypergeometric functions
V. P. Spiridonov

http://arxiv.org/abs/1610.01583
A Connection between the Riemann Hypothesis and Uniqueness of the Riemann zeta function
Pei-Chu Hu, Bao Qin Li

http://arxiv.org/abs/1610.01893
Precise error estimate of the Brent-McMillan algorithm for the computation of Euler's constant
Jean-Pierre Demailly

http://arxiv.org/abs/1610.01917
Affine Macdonald conjectures and special values of Felder-Varchenko functions
Eric M. Rains, Yi Sun, Alexander Varchenko

http://arxiv.org/abs/1610.01957
Polymeric quantum mechanics and the zeros of the Riemann zeta function
Jasel Berra-Montiel, Alberto Molgado

http://arxiv.org/abs/1610.02008
CMV biorthogonal Laurent polynomials: Christoffel formulas for Christoffel and Geronimus perturbations
Gerardo Ariznabarreta, Manuel Mañas, Alfredo Toledano

http://arxiv.org/abs/1610.02562
Some families of generalized Mathieu-type power series, associated probability distributions and related functional inequalities involving complete monotonicity and log-convexity
Zivorad Tomovski, Khaled Mehrez

http://arxiv.org/abs/1610.02638
A higher rank Racah algebra and the $\mathbb{Z}_2^n$ Laplace-Dunkl operator
Hendrik De Bie, Vincent X. Genest, Wouter van de Vijver, Luc Vinet

http://arxiv.org/abs/1610.03194
Toda systems and hypergeometric equations
Chang-Shou Lin, Zhaohu Nie, Juncheng Wei

http://arxiv.org/abs/1610.03233
Bounds for radii of starlikeness and convexity of some special functions
İbrahim Aktaş, Árpád Baricz, Halit Orhan

http://arxiv.org/abs/1610.03387
Scaling Limits for Partial Sums of Power Series
Antonio R. Vargas

http://arxiv.org/abs/1610.03616
Local integrability of Bessel functions on split groups
Jingsong Chai

http://arxiv.org/abs/1610.03693
The series that Ramanujan misunderstood
Geoffrey B. Campbell, Aleksander Zujev

http://arxiv.org/abs/1610.03799
Some supercongruences for truncated generalized hypergeometric series $_3F_2$
Ji-Cai Liu

http://arxiv.org/abs/1610.04155
The generating function of bivariate Chebyshev polynomials associated with the Lie algebra G_2
E.V. Damaskinsky, M.A. Sokolov

http://arxiv.org/abs/1610.04344
Riemann's Zeta Function. The alternating Xi-Function $\xi_a(s)$
Renaat Van Malderen

http://arxiv.org/abs/1610.04472
Computation of the coefficients appearing in the uniform asymptotic expansions of integrals
Sarah Farid Khwaja, Adri B. Olde Daalhuis

http://arxiv.org/abs/1610.04473
A Lauricella hypergeometric series over finite fields
Bing He

http://arxiv.org/abs/1610.04479
Efficient and accurate computation of electric field dyadic Green's function in layered media
Min Hyung Cho, Wei Cai

http://arxiv.org/abs/1610.04750
On generalized trigonometric functions and series of rational functions
Han Yu

http://arxiv.org/abs/1610.04839
Bilateral sums related to Ramanujan-like series
Jesús Guillera

http://arxiv.org/abs/1610.04977
The sixth moment of the Riemann zeta function and ternary additive divisor sums
Nathan Ng

http://arxiv.org/abs/1610.05026
Boundedness of Lebesgue constants and interpolating Faber bases
Viktoriia Bilet, Oleksiy Dovgoshey, Jürgen Prestin

http://arxiv.org/abs/1610.05360
Universality of the nodal length of bivariate random trigonometric polynomials
Jürgen Angst, Guillaume Poly, Hung Pham Viet

http://arxiv.org/abs/1610.05480
Some relations deduced from regularized double shuffle relations of multiple zeta values
Zhonghua Li, Chen Qin

http://arxiv.org/abs/1610.05495
On a Sine Polynomial of Turan
Horst Alzer, Man Kam Kwong

http://arxiv.org/abs/1610.05524
Initial boundary value problems for a fractional differential equation with hyper-Bessel operator
Fatma Al-Musalhi, Nasser Al-Salti, Erkinjon Karimov

http://arxiv.org/abs/1610.05553
Criteria of convergence of a non ordinary random continued fractions on a symmetric cone
Abdelhamid Hassairi

http://arxiv.org/abs/1610.05605
Relativistic Heat Equation via Lévy stable distributions: Exact Solutions
K. A. Penson, K. Górska, A. Horzela, G. Dattoli

http://arxiv.org/abs/1610.05840
On a theorem of A. I. Popov on sums of squares
Bruce C. Berndt, Atul Dixit, Sun Kim, Alexandru Zaharescu

http://arxiv.org/abs/1610.06108
Universality of the matrix Airy and Bessel functions at spectral edges of unitary ensembles
Marco Bertola, Mattia Cafasso

http://arxiv.org/abs/1610.06113
Convergence of the Critical Planar Ising Interfaces to Hypergeometric SLE
Hao Wu

http://arxiv.org/abs/1610.06120
Mean values of the Barnes double zeta-function
Takashi Miyagawa

http://arxiv.org/abs/1610.06207
Elliptic Polylogarithms and Basic Hypergeometric Functions
Giampiero Passarino

http://arxiv.org/abs/1610.06531
Moment Representations of Exceptional X_1 Orthogonal Polynomials
Constanze Liaw, Jessica Stewart Kelly, John Osborn

http://arxiv.org/abs/1610.06748
On Hahn polynomial expansion of a continuous function of bounded variation
René Goertz, Philipp Öffner

http://arxiv.org/abs/1610.07171
Numerical computation of a fractional derivative with non-local and non-singular kernel
J.D. Djida, I. Area, A. Atangana

http://arxiv.org/abs/1610.07309
Zeros of orthogonal polynomials near an algebraic singularity of the measure
Árpád Baricz, Tivadar Danka

http://arxiv.org/abs/1610.07554
Some Relationships and Properties of the Hypergeometric Distribution
Peter Peskun

http://arxiv.org/abs/1610.07658
On transfer operators on the circle with trigonometric weights
Xianghong Chen, Hans Volkmer

http://arxiv.org/abs/1610.07660
Orthogonal polynomials on Cantor sets of zero Lebesgue measure
Gökalp Alpan

http://arxiv.org/abs/1610.07680
Counting Zeros of Cosine Polynomials: On a Problem of Littlewood
Julian Sahasrabudhe

http://arxiv.org/abs/1610.07743
Phase Space Distribution of Riemann Zeros
Parikshit Dutta, Suvankar Dutta

http://arxiv.org/abs/1610.07932
Zeros of Lattice Sums: 3. Reduction of the Generalised Riemann Hypothesis to Specific Geometries
Ross C. McPhedran

http://arxiv.org/abs/1610.07945
Real zeros of the Hurwitz zeta function
Toshiki Matsusaka

http://arxiv.org/abs/1610.08320
Matrix product construction for Koornwinder polynomials and fluctuations of the current in the open ASEP
C. Finn, M. Vanicat

http://arxiv.org/abs/1610.08561
On the probability of positive-definiteness in the gGUE via semi-classical Laguerre polynomials
Alfredo Deaño, Nick Simm

http://arxiv.org/abs/1610.08680
Weight-dependent commutation relations and combinatorial identities
Michael J. Schlosser, Meesue Yoo

http://arxiv.org/abs/1610.08681
New numerical scheme of Atangana-Baleanu fractional integral: an application to ground-water flow within leaky aquifer
J.D. Djida, I. Area, A. Atangana

http://arxiv.org/abs/1610.08750
Asymptotic behavior and representation of solutions to a Volterra kind of equation with a singular kernel
Rodrigo Ponce, Mahamadi Warma

http://arxiv.org/abs/1610.09187
Distribution of ratio of two Wishart matrices and evaluation of cumulative probability by holonomic gradient method
Hiroki Hashiguchi, Nobuki Takayama, Akimichi Takemura

http://arxiv.org/abs/1610.09229
The star-triangle relation, lens partition function, and hypergeometric sum/integrals
Ilmar Gahramanov, Andrew P. Kels

http://arxiv.org/abs/1610.09666
Generating Function Transformations Related to Polylogarithm Functions and the k-Order Harmonic Numbers
Maxie D. Schmidt

http://arxiv.org/abs/1610.09737
Revitalized automatic proofs: demonstrations
Tewodros Amdeberhan, David Callan, Hideyuki Ohtsuka, Roberto Tauraso

http://arxiv.org/abs/1610.09754
A Complete Hypergeometric Point Count Formula for Dwork Hypersurfaces
Heidi Goodson

http://arxiv.org/abs/1610.09757
Galoisian approach to complex oscillation theory of Hill equations
Yik-Man Chiang, Guo-Fu Yu

http://arxiv.org/abs/1610.09791
The arclength of a random lemniscate in the plane
Erik Lundberg, Koushik Ramachandran

http://arxiv.org/abs/1610.09854
Multi-indexed Meixner and Little q-Jacobi (Laguerre) Polynomials
Satoru Odake, Ryu Sasaki

http://arxiv.org/abs/1610.10009
Distributional fractional powers of similar operators. Applications to the Bessel operators
Sandra Molina

Topic #7 —— OP – SF Net 23.6 —— November 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 176 members (as of October 20, 2016) scattered about in 30 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 (dominicd@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:

Society for Industrial and Applied Mathematics
3600 University City Science Center
Philadelphia, PA 19104-2688 USA

Topic #8 ──── OP – SF Net 23.6 ──── November 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 24.1 should be sent by January 1, 2017.

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

"I have had my results for a long time: but I do not yet know how I am to arrive at them."

Johann Carl Friedrich Gauss, in A. Arber, *The Mind and the Eye*, (1954).