

# OP-SF NET - Volume 21, Number 6 - November 15, 2014

Editors:

Diego Dominici  
Martin Muldoon

[dominid@newpaltz.edu](mailto:dominid@newpaltz.edu)  
[muldoon@yorku.ca](mailto:muldoon@yorku.ca)

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

Please send contributions to: [poly@siam.org](mailto:poly@siam.org)  
Subscribe by mailing to: [poly-request@siam.org](mailto:poly-request@siam.org)  
or to: [listproc@nist.gov](mailto:listproc@nist.gov)

Topics:

1. Gábor Szegő Prize
2. Report on Mourad Ismail conference
3. Peter Szego 1925-2014
4. Fellows of the AMS
5. Walter Gautschi - Selected Works
6. Analysis and Applications: Frank Olver special issues
7. Preprints in arXiv.org
8. About the Activity Group
9. Submitting contributions to OP-SF NET and SIAM-OPSF (OP-SF Talk)

## Calendar of Events:

### December 1-5, 2014

International Conference on Applied Mathematics in honour of Professor Roderick S. C. Wong's 70<sup>th</sup> Birthday, City University of Hong Kong  
<http://www6.cityu.edu.hk/rcms/icam2014/>

### December 11-20, 2014

Foundations of Computational Mathematics, Montevideo, Uruguay  
(including workshops on Approximation Theory and on Special Functions and Orthogonal Polynomials)  
[http://www.fing.edu.uy/~jana/www2/focm\\_2014.html](http://www.fing.edu.uy/~jana/www2/focm_2014.html)

### March 3-6, 2015

Conference on Representation Theory, Special Functions and Painlevé Equations, RIMS, Kyoto, Japan  
<http://www2.kobe-u.ac.jp/~mhsaito/rims1503/>

### May 10-12, 2015

International Conference on Orthogonal Polynomials and q-Series, celebrating the 70<sup>th</sup> birthday of Mourad Ismail, Orlando, Florida, USA  
<http://math.cos.ucf.edu/opqs15/opqs2015.html>

**June 1-5, 2015**

13th International Symposium on Orthogonal Polynomials, Special Functions and Applications (OPSFA13), Gaithersburg, Maryland, USA  
<http://www.siam.org/meetings/opsfa13/>

**June 8-12, 2015**

V Iberoamerican Workshop on Orthogonal Polynomials, Mexico City  
<http://paginas.matem.unam.mx/eibpoa2015/index.php/en/>

**August 9-14, 2015**

Orthogonal and Multiple Orthogonal Polynomials, Oaxaca, Mexico  
<http://www.birs.ca/events/2015/5-day-workshops/15w5022>

**August 10-14, 2015**

ICIAM 2015 (International Congress on Industrial and Applied Mathematics), Beijing, China  
<http://www.iciam2015.cn/>

**Topic #1 ----- OP-SF NET 21.6 ----- November 15, 2014**

From: Walter Van Assche [Walter.VanAssche@wis.kuleuven.be](mailto:Walter.VanAssche@wis.kuleuven.be)  
Subject: Gábor Szegő Prize

The deadline for the Gábor Szegő prize will be extended by 1 month to December 1, 2014.

The Gábor Szegő Prize will be awarded by SIAG/OPSF at OPSFA 2015. OPSFA 2015 - the 13th International Symposium on Orthogonal Polynomials, Special Functions, and Applications - will be held June 1-5, 2015, at National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland, USA.

The Gábor Szegő Prize is awarded biennially to an early career researcher for outstanding research contributions in the area of orthogonal polynomials and special functions. The recipient will be requested to give a talk at the conference.

The contributions must be contained in a paper or papers published in English in peer-reviewed journals. The prize will be awarded to a researcher who has at most 10 years of involvement in mathematics since PhD or equivalent degree.

Nominations should be addressed to Professor Walter Van Assche, Chair, Gábor Szegő Prize Committee and sent with attachments to [szego\\_prize@siam.org](mailto:szego_prize@siam.org) by December 1, 2014. A valid nomination requires 1.) A letter of nomination signed by two members of the SIAG/OPSF and 2.) the nominee's CV. The letter

should indicate 3.) the paper(s) cited for the work being recognized, explain the significance of the work, and (in the case of multiple authors) indicate the contribution of the nominee.

## Topic #2 ----- OP-SF NET 21.6 ----- November 15, 2014

From: Walter Van Assche [Walter.VanAssche@wis.kuleuven.be](mailto:Walter.VanAssche@wis.kuleuven.be)

Subject: Report on Mourad Ismail conference

The latest in the series of conferences honouring significant birthdays was that for Mourad Ismail. His 70th birthday was celebrated at an international conference *Orthogonal Polynomials, Integrable Systems and Their Applications* sponsored by Shanghai Jiao Tong University and Shaoxing University. The first two days (October 25-26, 2014) were at the Shanghai Jiao Tong University. On October 27, the participants were put on a bus for a trip of 2.5 hours to Shaoxing, a city in the province of Zhejiang to the south-west of Shanghai. That afternoon there was an excursion to the house of Lu Xun (1881--1936), a leading figure of modern Chinese literature, and to a garden of calligraphy. The next two days (October 28-29) the conference was held at the Shaoxing hotel.

The conference was focused on some areas in which Mourad Ismail has had strong influence and interest: orthogonal polynomials (his book on *Classical and Quantum Orthogonal Polynomials in One Variable* should be on the desk of anyone reading this Newsletter), integrable systems and their applications. Special functions were not mentioned in the conference title but Mourad is definitely also an expert in this field, in particular  $q$ -theory and combinatorics. All talks were treated in a similar way: everyone was allowed to talk for 40 minutes and 5 minutes were reserved for questions, hence no plenary talks and no parallel sessions. This has the advantage that you don't have to miss any of the talks because another interesting talk is going on in a parallel session. It has the disadvantage that you don't have any excuse to skip a talk (for some sightseeing for instance).

Let me mention some of the talks that I liked (with the risk of not being objective and with my apologies to those I am not mentioning explicitly). Alberto Grünbaum talked about quantum walks in his usual lucid style, pointing out a paper by Ismail (with H. Carteret and B. Richmond) from 2003 on *Three routes to the exact asymptotics for the one-dimensional quantum walk* (J. Phys. A **36**, (2003), 8775-8795). Nalini Joshi once more gave a wonderful talk on Painlevé equations (continuous and discrete) and their asymptotics, and Edmund Chiang talked about *Nevanlinna theory based on the Askey-Wilson operator*.

On the second day, Pierre van Moerbeke explained how domino tiling and random matrices contain a lot of beautiful mathematics involving special functions and discrete integrable systems. I was also very much pleased with the talks of Dan Dai and Yu-Qiu Zhao about Plancherel-Rotach asymptotics and orthogonal polynomials with singular weights. They both used the Riemann-

Hilbert approach that, during the past few decades, has turned out to be so useful for obtaining asymptotic results for orthogonal polynomials.

In Shaoxing I liked the talk of Jacek Szmigielski a lot, where he combined non-smooth waves (peakons), integrability, orthogonal and bi-orthogonal polynomials into a very tasteful exposition. I would like to mention here that Szmigielski and Beals have written a *Gentle Introduction to Meijer G-functions* in Notices Amer. Math. Soc. **60** (2013), 866-872, which I strongly recommend to all the members of our SIAG. Xiangke Chang gave some examples about the relationship between integrable systems (discrete, semi-discrete and continuous) and orthogonal polynomials, thereby touching upon the main themes of this international conference. Guillermo López Lagomasino explained various properties of Nikishin systems and in particular the convergence of Hermite-Padé approximants to rational perturbations of such systems. On the last day of the conference, Luc Vinet introduced the audience to Bannai-Ito polynomials and the related algebra with many applications in mathematical physics. These orthogonal polynomials are somewhat hidden in the Askey table since they are  $q=-1$  limits of the  $q$ -Racah polynomials, but they really deserve to be studied as they are, and not as limits of  $q$ -Racah polynomials. Dennis Stanton gave a talk with one theorem about a general class of basic hypergeometric polynomials for which he gave orthogonality relations (extending the orthogonality relations for Askey-Wilson polynomials). The last talk that I want to mention explicitly is that of Vincent Genest since it involved multivariate orthogonal polynomials, with various group theoretical interpretations and some applications.

The conference was quite successful and the organizers (Xing-Biao Hu, Sen-Yue Lou, Mikhail Tyaglov, Guo-Fu Yu, Jun Yu, Ruiming Zhang and Zuo-Nong Zhu) succeeded in getting together excellent speakers who were able to present their recent work in areas of interest to Mourad Ismail. Mourad's influence and his supervision and collaboration with many researchers, not only established ones but especially many starting people and people from all over the world, was pointed out by many of the participants at the banquet. Thanks, Mourad, for being such a good person, scientist and friend. You really deserved being celebrated at an international conference among your peers.

Topic #3 ----- OP-SF NET 21.6 ----- November 15, 2014

From: Martin Muldoon [muldoon@yorku.ca](mailto:muldoon@yorku.ca)  
Subject: Peter Szego 1925-2014

Peter Szego, a long-time resident of San Jose, California, died on September 28, 2014. Peter was the son of Gabor Szegő (1895-1985). He taught at Rice University and at the University of Santa Clara but also worked in industry (Ampex Corporation), political strategy and community service in the state of California. He had a long collaboration with Lee Lorch, much of it having to do with Bessel functions and their zeros, continuing into the 21st century.

For further information, see:

<http://www.legacy.com/obituaries/mercurynews/obituary.aspx?pid=172677524>

#### Topic #4 ----- OP-SF NET 21.6 ----- November 15, 2014

From: OP-SF NET Editors

Subject: Fellows of the AMS

The American Mathematical Society has published its 2015 List of Fellows containing 63 names. See

<http://www.ams.org/profession/ams-fellows/new-fellows>

Among the new Fellows related to the interests of members of our Activity are:

Jonathan Michael Borwein, University of Newcastle (Australia)

“For contributions to nonsmooth analysis and classical analysis as well as experimental mathematics and visualization of mathematics.”

Mourad E. H. Ismail, King Saud University and University of Central Florida,

“For contributions to classical analysis and special function theory, as well as service to the community.”

Willard Miller, Jr., University of Minnesota, Twin Cities,

“For contributions to applied mathematics, especially special function theory, and for service to the mathematical community.”

Congratulations to these and all the new Fellows!

#### Topic #5 ----- OP-SF NET 21.6 ----- November 15, 2014

From: OP-SF NET Editors

Subject: Walter Gautschi - Selected Works

Claude Brezinski and Ahmed Saleh, eds.,  
Walter Gautschi: Selected Works with Commentaries  
3 vols, Birkhäuser, 2014.

ISBN 978-1-4614-7131-8

Available as hard-cover and as eBook.

Further information: [www.springer.com/birkhauser](http://www.springer.com/birkhauser)

- search under “Gautschi”.

Partial Contents:

Biography of Walter Gautschi – the editors  
A Brief Summary of My Scientific Work and Highlights of My Career –  
Walter Gautschi  
Publications - Walter Gautschi

Commentaries on the papers in various areas:

Numerical Conditioning - Nicholas J. Higham  
Special Functions - Javier Segura  
Interpolation and Approximation - Miodrag M. Spalević  
Orthogonal Polynomials on the Real Line - Gradimir V. Milovanović  
Polynomials Orthogonal on the Semicircle -Lothar Reichel  
Chebyshev Quadrature - Jaap Korevaar  
Kronrod and Other Quadratures - Giovanni Monegato  
Gauss-type Quadrature - Walter Van Assche  
Linear Recurrence Relations - Lisa Lorentzen  
Ordinary Differential Equations - John Butcher  
Computer Algorithms and Software Packages - Gradimir V. Milovanović  
History and Biography - Gerhard Wanner  
Miscellanea - Martin J. Gander

Topic #6 ----- OP-SF NET 21.6 ----- November 15, 2014

From: OP-SF NET Editors  
Subject: Analysis and Applications: Frank Olver special issues

The three most recent issues of Analysis and Applications have been dedicated to the memory of Frank Olver, 1924-2013. They were edited by Nico Temme and Roderick Wong.

Here is the table of contents:

**Vol. 12 No. 4 (July 2014)**

A tribute to Frank Olver (1924–2013), *M. Berry*

In memoriam Frank W. J. Olver (1924–2013), *R. Wong*

Mathematics that has intrigued me, *F. W. J. Olver*

On the blow-up of solutions to the integrable modified Camassa–Holm equation,  
*Y. Liu, P. J. Olver, C. Qu, S. Zhang*

Change of variable formulas for regularizing slowly decaying and oscillatory  
Cauchy and Hilbert transforms, *S. Olver*

Olver's error bound methods applied to linear ordinary differential equations having a simple turning point, *T. M. Dunster*

The resurgence properties of the large-order asymptotics of the Hankel and Bessel functions, *G. Nemes*

Asymptotics of linear recurrences, *R. Wong*

#### **Vol. 12 No. 5 (September 2014)**

The radius of convexity of normalized Bessel functions of the first kind, *Arpad Baricz and Robert Szasz*

On a conjecture on sparse binomial-type polynomials by Brown, Dilcher and Manna, *Wolfgang Gawronski and Thorsten Neuschel*

Convergent and asymptotic expansions of solutions of second order differential equations with a large parameter, *Chelo Ferreira, Jose L. Lopez and Ester Perez Sinusia*

On the complex zeros of Airy and Bessel functions and those of their derivatives, *Amparo Gil and Javier Segura*

Zeros of pseudo-ultraspherical polynomials, *Kathy Driver and Martin E. Muldoon*

Quadratic algebra contractions and 2nd order superintegrable systems, *Willard Miller and Ernest G. Kalnins*

#### **Vol. 12 No. 6 (November 2014)**

Expansions for a Fundamental Solution of Laplace's Equation on  $R^3$  in 5-cyclidic harmonics, *Howard Cohl and Hans Volkmer*

Zero distribution of polynomials satisfying a differential-difference equation, *Diego Dominici and Walter Van Assche*

Uniform asymptotic expansions for hypergeometric functions with large parameters IV, *Sarah Farid Khwaja and Adri B. Olde Daalhuis*

On the equivalence of two fundamental theta identities, *Tom H. Koornwinder*

Global asymptotics of the Szegő-Askey Polynomials, *Y. Lin and R. Wong*

Topic #7 ----- OP-SF NET 21.6 ----- November 15, 2014

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, mostly during September and October 2014.

<http://arxiv.org/abs/1409.1498>

Complete Monotonicity of classical theta functions and applications  
A. Raouf Chouikha

<http://arxiv.org/abs/1409.0570>

Multivariate orthogonal polynomial and integrable systems  
Gerardo Ariznabarreta, Manuel Mañas

<http://arxiv.org/abs/1409.1620>

Orthogonal Polynomials for Semiparametric Instrumental Variables Model  
Yevgeniy Kovchegov, Nese Yildiz

<http://arxiv.org/abs/1409.4697>

Higher order recurrence relation for exceptional Charlier, Meixner, Hermite and Laguerre orthogonal polynomials  
Antonio J. Durán

<http://arxiv.org/abs/1409.4715>

Krawtchouk transforms and Convolutions  
Philip Feinsilver, René Schott

<http://arxiv.org/abs/1409.0999>

DARBOUX partners of pseudoscalar Dirac potentials associated with exceptional orthogonal polynomials  
Axel Schulze-Halberg, Barnana Roy

<http://arxiv.org/abs/1410.0131>

Some observations about super Catalan numbers, corresponding orthogonal polynomials, and their q-analogues  
Johann Cigler

<http://arxiv.org/abs/1410.0183>

A new recurrence formula for generic exceptional orthogonal polynomials  
Hiroshi Miki, Satoshi Tsujimoto

<http://arxiv.org/abs/1410.1261>

Strong asymptotics for the Pollaczek multiple orthogonal polynomials ensembles  
A. I. Aptekarev, G. Lopez Lagomasino, A. Martinez-Finkelshtein



<http://arxiv.org/abs/1410.1332>

On 2D discrete Schrödinger operators associated with multiple orthogonal polynomials

Alexander I Aptekarev, Maxim Derevyagin, Walter Van Assche

<http://arxiv.org/abs/1410.3948>

Uniform asymptotics for discrete orthogonal polynomials on infinite nodes with an accumulation point

Xiao-Bo Wu, Yu Lin, Shuai-Xia Xu, Yu-Qiu Zhao

<http://arxiv.org/abs/1410.4683>

Orthogonal polynomials through the invariant theory of binary forms

Pasquale Petrullo, Domenico Senato, Rosaria Simone

<http://arxiv.org/abs/1410.6731>

Markov processes, polynomial martingales and orthogonal polynomials

Paweł J. Szablowski

<http://arxiv.org/abs/1410.8236>

Recurrence Relations of the Multi-Indexed Orthogonal Polynomials : II

Satoru Odake

<http://arxiv.org/abs/1409.3071>

Representations and inequalities for generalized hypergeometric functions

Dmitrii Karp

<http://arxiv.org/abs/1409.4287>

Non-symmetric basic hypergeometric polynomials and representation theory for confluent Cherednik algebras

Marta Mazzocco

<http://arxiv.org/abs/1409.1075>

Turán type inequalities for confluent hypergeometric functions of the second kind

Árpád Baricz, Saminathan Ponnusamy, Sanjeev Singh

<http://arxiv.org/abs/1409.8527>

A note on a hypergeometric transformation formula due to Slater with an application

Y. S. Kim, A. K. Rathie, R. B. Paris

<http://arxiv.org/abs/1409.0235>

Supersymmetry, shape invariance and the hypergeometric equation

Ashok K. Das, Pushpa Kalauni

<http://arxiv.org/abs/1410.3241>

Extensions of the classical theorems for very well-poised hypergeometric functions

Yashoverdhan Vyas, Kalpana Fatawat

<http://arxiv.org/abs/1410.5636>

A new proof for a nonterminating "strange" hypergeometric evaluation of Gasper and Rahman

Chenyang Wang, Xiaojing Chen

<http://arxiv.org/abs/1410.6120>

Proofs of some conjectures on monotonicity of ratios of Kummer, Gauss and generalized hypergeometric functions

Khaled Mehrez, Sergei M. Sitnik

<http://arxiv.org/abs/1410.6921>

Duality transformation formulas for multiple elliptic hypergeometric series of type  $BC_n$

Yasushi Komori, Yasuho Masuda, Masatoshi Noumi

<http://arxiv.org/abs/1409.4640>

Distribution of zeros of polynomials with positive coefficients

Alexandre Eremenko, Walter Bergweiler

<http://arxiv.org/abs/1409.4901>

Admissibility condition for exceptional Laguerre polynomials

Antonio J. Durán, Mario Pérez

<http://arxiv.org/abs/1409.6525>

The  $1/k$ -Eulerian polynomials and  $k$ -Stirling permutations

Shi-Mei Ma, Toufik Mansour

<http://arxiv.org/abs/1409.3710>

On properties of Tribonacci-Lucas polynomials

Hasan Kose, Nazmiye Yilmaz, Necati Taskara

<http://arxiv.org/abs/1410.3908>

Deformed Complex Hermite Polynomials

S. Twareque Ali, Mourad E. H. Ismail, Nurisya M. Shah

<http://arxiv.org/abs/1410.4703>

Spin lattices, state transfer and bivariate Krawtchouk polynomials

Vincent X. Genest, Hiroshi Miki, Luc Vinet, Alexei Zhedanov

<http://arxiv.org/abs/1410.0549>

Properties of the zeros of the polynomials belonging to the  $q$ -Askey scheme

Oksana Bihun, Francesco Calogero

<http://arxiv.org/abs/1410.0906>

The Electrostatic Properties of Zeros of Exceptional Laguerre and Jacobi Polynomials and stable interpolation  
Á. P. Horváth

<http://arxiv.org/abs/1410.2286>

Discrete Entropy of Generalized Jacobi Polynomials  
Andrei Martinez-Finkelshtein, Paul Nevai, Ana Peña

<http://arxiv.org/abs/1410.2661>

Asymptotic behaviour of some families of orthonormal polynomials and an associated Hilbert space  
Aleksandar Ignjatovic

<http://arxiv.org/abs/1410.2772>

Variations of the Poincaré series for affine Weyl groups and  $q$ -analogues of Chebyshev polynomials  
Eric Marberg, Graham White

<http://arxiv.org/abs/1409.0293>

Radii of starlikeness and convexity of some  $q$ -Bessel functions  
Árpád Baricz, Dimitar K. Dimitrov, István Mező

<http://arxiv.org/abs/1409.3932>

Padé interpolation to  $q$ -Painlevé equations  
Hidehito Nagao

<http://arxiv.org/abs/1410.2365>

Twisted zastava and  $q$ -Whittaker functions  
Alexander Braverman, Michael Finkelberg

<http://arxiv.org/abs/1410.3674>

Spectral types of linear  $q$ -difference equations and  $q$ -analog of middle convolution  
Hidetaka Sakai, Masashi Yamaguchi

<http://arxiv.org/abs/1410.5301>

An overpartition analogue of the  $q$ -binomial coefficients  
Jehanne Dousse, Byungchan Kim

<http://arxiv.org/abs/1410.7087>

Bounds on Kronecker and  $q$ -binomial coefficients  
Igor Pak, Greta Panova

<http://arxiv.org/abs/1409.6413>

Asymptotic formulas for the gamma function constructed by bivariate means  
Zhen-Hang Yang

<http://arxiv.org/abs/1409.2971>

A note on the zeros of the Digamma function and the derivative of the log-Barnes function

István Mező

<http://arxiv.org/abs/1410.8575>

Expansions of the solutions of the biconfluent Heun equation in terms of incomplete Beta and Gamma functions

C. Leroy, Y. Pashayan-Leroy, A.M. Ishkhanyan

<http://arxiv.org/abs/1409.4100>

On the asymptotics of Bessel functions in the Fresnel regime

Jhu Heitman, James Bremer, Vladimir Rokhlin, Bogdan Vioreanu

<http://arxiv.org/abs/1410.3436>

Inside the nature of squared Bessel process

Maciej Wiśniewolski

<http://arxiv.org/abs/1410.4102>

Asymptotic formulae for the Lommel and Bessel functions and their derivatives

Nadezhda Aleksandrova

<http://arxiv.org/abs/1410.5783>

Differential subordinations and superordinations for generalized Bessel functions

Huda A. Al-Kharsani, Árpád Baricz, K.S. Nisar

<http://arxiv.org/abs/1410.6266>

Starlikeness of a cross-product of Bessel functions

Huda A. Al-Kharsani, Árpád Baricz, Tibor K. Pogány

<http://arxiv.org/abs/1409.1166>

The master Painlevé VI heat equation

Robert Conte (CMLA, ENS Cachan, France), Ivan Dornic (SPEC, CEA-Saclay, France)

<http://arxiv.org/abs/1410.2649>

Painleve Classification of Polynomial Ordinary Differential Equations of Arbitrary Order and Second Degree

Stanislav Sobolevsky

<http://arxiv.org/abs/1410.3338>

Location of Poles for the Hastings-McLeod Solution to the Second Painlevé Equation

Min Huang, Shuai-Xia Xu, Lun Zhang

<http://arxiv.org/abs/1410.4976>

Isomonodromic deformation of Lamé connections, Painlevé VI equation and Okamoto symmetry  
Frank Loray

<http://arxiv.org/abs/1410.4965>

A positivity property of a Quantum Anharmonic Oscillator suggested by the BMV conjecture  
Victor Katsnelson

<http://arxiv.org/abs/1409.6035>

Lower bounds for the maximum of the Riemann zeta function along vertical lines  
Christoph Aistleitner

<http://arxiv.org/abs/1410.3635>

Large gaps between consecutive zeros of the Riemann zeta-function. III  
H. M. Bui

<http://arxiv.org/abs/1410.3926>

Nonnegative trigonometric polynomials and a zero-free region for the Riemann zeta-function  
Michael J. Mossinghoff, Timothy S. Trudgian

<http://arxiv.org/abs/1410.8312>

Ramanujan Series for Epstein Zeta Functions  
Yajun Zhou

<http://arxiv.org/abs/1410.8592>

"Marvelous cancellations": T.J. Stieltjes' letters concerning the zeta function  
Juan Marin

<http://arxiv.org/abs/1409.5332>

On the phenomena of constant curvature in the diffusion-orthogonal polynomials  
Lev Soukhanov

<http://arxiv.org/abs/1410.6731>

Markov processes, polynomial martingales and orthogonal polynomials  
Paweł J. Szabłowski

<http://arxiv.org/abs/1410.3948>

Uniform asymptotics for discrete orthogonal polynomials on infinite nodes with an accumulation point  
Xiao-Bo Wu, Yu Lin, Shuai-Xia Xu, Yu-Qiu Zhao

<http://arxiv.org/abs/1410.5783>

Differential subordinations and superordinations for generalized Bessel functions  
Huda A. Al-Kharsani, Árpád Baricz, K.S. Nisar

<http://arxiv.org/abs/1410.0927>

Starlikeness of Bessel functions and their derivatives

[Árpád Baricz](#), [Murat Çağlar](#), [Erhan Deniz](#)

<http://arxiv.org/abs/1409.7561>

Explicit Evaluations of Matrix-variate Gamma and Beta Integrals in the Real and Complex Cases

[A.M. Mathai](#)

<http://arxiv.org/abs/1409.7559>

Evaluation of Matrix-variate Gamma and Beta Integrals as Multiple Integrals and Kober Fractional Integral Operators in the Complex Matrix Variate Case

[A.M. Mathai](#)

<http://arxiv.org/abs/1410.6194> [[pdf](#), [other](#)]

Stability analysis for linear heat conduction with memory kernels described by Gamma functions

[Corrado Mascia](#)

<http://arxiv.org/abs/1410.5043>

On the integral representations of  $|\Gamma(z)|^2$  and its Fourier transform

[Nicolas Privault](#)

<http://arxiv.org/abs/1409.4053>

Discrete integrable systems generated by Hermite-Padé approximants

[Alexander I. Aptekarev](#), [Maxim Derevyagin](#), [Walter Van Assche](#)

<http://arxiv.org/abs/1410.2162>

Mixed norm estimates for the Cesàro means associated with Dunkl--Hermite expansions

[Pradeep Boggarapu](#), [L. Roncal](#), [S. Thangavelu](#)

<http://arxiv.org/abs/1410.4112>

Gegenbauer-Chebyshev Integrals and Radon Transforms

[Boris Rubin](#)

<http://arxiv.org/abs/1409.5394>

Nearest neighbor spacing distributions for zeros of the real or imaginary part of the Riemann xi-function on vertical lines

[Masatoshi Suzuki](#)

<http://arxiv.org/abs/1409.2988>

Improvement of the theorem of Hardy-Littlewood on density of zeros of the function  $\zeta(1/2+it)$

[Jan Moser](#)

Topic #8 ----- OP-SF NET 21.6 ----- November 15, 2014

From: OP-SF NET Editors  
Subject: About the Activity Group

The SIAM Activity Group on Orthogonal Polynomials and Special Functions consists of a broad set of mathematicians, both pure and applied. The Group also includes engineers and scientists, students as well as experts. We have around 115 members scattered about in more than 20 countries. Whatever your specialty might be, we welcome your participation in this classical, and yet modern, topic. Our WWW home page is:

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

This is a convenient point of entry to all the services provided by the Group. Our Webmaster is Bonita Saunders ([bonita.saunders@nist.gov](mailto: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 Diego Dominici ([dominicd@newpaltz.edu](mailto:dominicd@newpaltz.edu)) and Martin Muldoon ([muldoon@yorku.ca](mailto:muldoon@yorku.ca)).

Back issues of OP-SF NET can be obtained at the WWW addresses:

<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 or to see a link the archive of all messages, 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 email to [siam-opsf@siam.org](mailto:siam-opsf@siam.org). The moderators are Bonita Saunders ([bonita.saunders@nist.gov](mailto:bonita.saunders@nist.gov)) and Diego Dominici ([dominicd@newpaltz.edu](mailto: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

phone: +1-215-382-9800

email: [service@siam.org](mailto:service@siam.org)

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

<http://www.siam.org/membership/outreachmem.htm>

## Topic #9 ----- OP-SF NET 21.6 ----- November 15, 2014

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 email to one of the OP-SF Editors [dominicd@newpaltz.edu](mailto:dominicd@newpaltz.edu) or [muldoon@yorku.ca](mailto:muldoon@yorku.ca) .

Contributions to OP-SF NET 22.1 should be sent by January 1, 2015.

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. 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 email to [siam-opsf@siam.org](mailto: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](mailto:service@siam.org)

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

Chair: Walter Van Assche

Vice Chair: Jeff Geronimo

Program Director: Diego Dominici

Secretary: Yuan Xu

The appointed officers are:

Diego Dominici, OP-SF NET co-editor and OP-SF Talk moderator

Martin Muldoon, OP-SF NET co-editor

Bonita Saunders, Webmaster and OP-SF Talk moderator