# OP-SFNET - Volume 16, Number 1 – January 15, 2009

## Editors:

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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 Subscribe by mailing to: poly-request@siam.org or to: listproc@nist.gov

## Today's Topics:

- 1. Butzer Conference web site
- 2. OPSFA-10 in Leuven
- 3. FAAT 2009
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## Calendar of Events:

## March 21-24, 2009

Workshop "Approximation Theory and Signal Analysis" dedicated to Professor Paul Leo Butzer on the occasion of his 80th birthday Lindau (Lake Constance), Germany 15.6, #2 16.1, #1 http://ibb.helmholtz-muenchen.de/~biomath/workshop\_atsa.html

## March 25-30, 2009

Random Matrices and Integrability: From Theory to Application, Yad Hashmona, Israel http://www.hit.ac.il/staff/kanzieper/yad8

## April 13-25, 2009

CIMPA-Unesco-Tunisia School "Analytical and Probabilistic Aspects of Dunkl Theory", Monastir, Tunisia 15.5 #6 http://www.cimpa-icpam.org/Anglais/2009Prog/Tunisia09.html

#### April 19--26, 2009 - \*\*\*\*CANCELLED\*\*\*\*

NoDIA-2009: Nonlinear Differential Equations, Integrability and Applications - Cape Town, South Africa.

## June 8-12, 2009

Sixth International Conference on Computational Methods and Function Theory, Ankara, Turkey. 15.4 #2 http://www.bilkent.edu.tr/~cmft/

#### June 14-20, 2009

47th International Symposium on Functional Equations Gargnano, Italy. GianLuigi.Forti@mat.unimi.it

#### June 15-18, 2009

3rd International Conference on Mathematics & Statistics, Athens, Greece http://www.atiner.gr/docs/Mathematics.htm

### June 25-28, 2009

International Conference on Applied Analysis and Scientific Computation Shanghai Normal University, Shanghai, China 15.5 #4 http://mathsc.shnu.edu.cn/conference/index.htm

## June 29 - July 3, 2009

Workshop "Discrete systems and special functions", Newton Institute for Mathematical Sciences, Cambridge, UK. 15.5 #9 http://www.newton.ac.uk/programmes/DIS/ws.htm

### July 20-24, 2009

FPSAC'09 -21st Annual International Conference on Formal Power Series and Algebraic Combinatorics, Hagenberg, Austria 15.5 #3

http://www.risc.jku.at/conferences/fpsac2009

## July 20-25, 2009

10th Symposium on Orthogonal Polynomials, Special Functions and Applications(OPSFA-10), Leuven, Belgium15.5 #2http://wis.kuleuven.be/OPSFA/OPSFA10.html

#### September 4-9, 2009

2nd Dolomites Workshop on Constructive Approximation and Applications" (DWCAA09), Alba di Canazei (Trento), Italy http://www.math.unipd.it/~dwcaa09

#### September 13-19, 2009

International Conference on Functional Equations and Inequalities, Krakow, Poland http://mat.ap.krakow.pl/icfei/13ICFEI/index.php

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## September 24-30, 2009

6th Maratea Conference on Functional Analysis and Approximation Theory (FAAT2009), Acquafreda di Maratea, Italy http://www.dm.uniba.it/faat2009

## Topic #1 ------ OP-SF NET 16.1 ------ January 15, 2009

From: Tom Koornwinder T.H.Koornwinder@uva.nl Subject: Butzer Conference web site

The Butzer Workshop "Approximation Theory and Signal Analysis" in Lindau, March 21-24, 2009 (OP-SF NET 15.6, Topic #2) has now a webpage: http://ibb.helmholtz-muenchen.de/~biomath/workshop\_atsa.html

## Topic #2 ------ OP-SF NET 16.1 ------ January 15, 2009

From: OP-SF NET Editors Subject: OPSFA-10 in Leuven

As announced on OP-SF NET 15.5 #@, the 10th Symposium on Orthogonal Polynomials, Special Functions and Applications (OPSFA-10) will be in Leuven, Belgium from July 20 to July 25, 2009.

The list of plenary speakers has been announced. It is:

\* Alexei Borodin, California Institute of Technology, Pasadena CA, USA

- \* Annie Cuyt, Universiteit Antwerpen, Belgium
- \* Holger Dette, Ruhr-Universität Bochum, Germany
- \* Antonio Durán, Universidad de Sevilla, Spain
- \* Philippe Flajolet, INRIA-Rocquencourt, France
- \* Nalini Joshi, University of Sydney, Australia

\* Ekaterina Karatsuba, Dorodnicyn Computing Centre, Russian Academy of Sciences, Moscow, Russia

\* Doron Lubinsky, Georgia Institute of Technology, Atlanta GA, USA

\* Hjalmar Rosengren, Chalmers University of Technology and University of Gothenburg, Göteborg, Sweden

\* Barry Simon, California Institute of Technology, Pasadena CA, USA

\* Vilmos Totik, University of Szeged, Hungary and University of South Florida, Tampa FL, USA

\* Ole Warnaar, University of Queensland, Brisbane, Australia

\* Wadim Zudilin, University of Newcastle, Australia

The conference website is

http://wis.kuleuven.be/OPSFA/OPSFA10.html

# Topic #3 ----- OP-SF NET 16.1 ------ January 15, 2009

From: OP-SF NET Editors Subject: FAAT 2009

The 6th Maratea Conference on Functional Analysis and Approximation Theory (FAAT2009) will be held in Acquafreda di Maratea, Italy, September 24-30, 2009.

The plenary lectures will be given by

- Jürgen Appell, Würzburg, Germany
- Gilles Godefroy, Paris, France
- Niels Jacob, Swansea, United Kingdom
- Mikio Kato, Kitakyushu, Japan
- Lech Maligranda, Luleå, Sweden
- Francisco Marcellán, Madrid, Spain
- Gradimir Milovanovic, Nis, Serbia
- Giovanni Monegato, Torino, Italy
- Ben de Pagter, Delft, The Netherlands
- Lars-Erik Persson, Luleå, Sweden
- Daniel Potts, Chemnitz, Germany
- Ioan Rasa, Cluj-Napoca, Romania
- Bernd Silbermann, Chemnitz, Germany
- Vilmos Totik, Szeged, Hungary
- Jozsef Szabados, Budapest, Hungary
- Peter Vertesi, Budapest, Hungary

For further information, see the web site http://www.dm.uniba.it/faat2009

## Topic #4 ------ OP-SF NET 16.1 ------ January 15, 2009

From: Tom Koornwinder T.H.Koornwinder@uva.nl Subject: "Special functions and group theory", Oberwolfach, 1983

An Oberwolfach conference on "Special functions and group theory" was held long ago, March 14-18, 1983. It was organized by Dick Askey, Walter Schempp and me. I took photos of most of the speakers during their lectures. Recently I scanned these pictures and put them on the web: see

http://staff.science.uva.nl/~thk/pictures/Oberwolfach1983/ .

Some of these people have died, some have retired but are still active, and many are still in office although 25 years older. Anyhow, it will be interesting to see these pictures of relatively young mathematicians, and to read some of the stuff on the blackboard.

# Topic #5 ----- OP-SF NET 16.1 ----- January 15, 2009

From: Michelle Montgomery montgomery@siam.org Subject: Modeling Contest for High School Students

Dear SIAM Members,

Pardon the intrusion. To retain freshness and vitality, every profession needs to encourage talented young people to enter the field. Applied mathematics & computational science is no exception to this rule. While SIAM remains focused as a professional society on furthering research, on new applications in science and industry, and on promoting student activities at the graduate level, the society has also undertaken new activities at the K-12 level. One such activity is a mathematical modeling contest for high school students, sponsored by the Moody's Foundation.

On behalf of Lee Seitelman and Ben Fusaro I wanted to draw your attention to part of Jim Crowley's "Talk of the Society" article from the November issue of *SIAM News*. [...] I am pointing to the last paragraph for your help - copied here:

Lee Seitelman and Ben Fusaro welcome input from the SIAM community for modeling problems for future contests. Unfortunately, there is not a surfeit of realistic modeling problems that can be studied, "solved," and documented in 14 hours by high school students, using only Internet resources and reference materials! Suggested problems should be sent to Seitelman (Iseitelman@aol.com) or Michelle Montgomery (montgomery@siam.org). A \$500 honorarium will be awarded to the author of any problem chosen for the contest.

Alternatively you can go to http://m3challenge.siam.org/problemidea/idea.php to upload your problem idea for consideration. I look forward to hearing from you. Sincerely, Michelle Montgomery SIAM Moody's Mega Math Challenge Project Director montgomery@siam.org

Topic #6 ----- OP-SF NET 16.1 ------ January 15, 2009

From: Roger Germundsson roger@wolfram.com Subject: A new Mathematica

I'm happy to report that we just released Mathematica 7 (http://www.wolfram.com/products/mathematica/newin7/).

In particular I think you will enjoy: http://www.wolfram.com/products/mathematica/newin7/content/DiscreteCalculus/ http://www.wolfram.com/products/mathematica/newin7/content/DifferentialAndDifference Roots/ http://www.wolfram.com/products/mathematica/newin7/content/NewCategoriesOfSpecial Functions/

In particular there is a q-Zeilberger implementation in there ...

## Topic #7 ----- OP-SF NET 16.1 ------ January 15, 2009

From: OP-SF NET Editors Subject: George Andrews honored

"Combinatory Analysis 2008: Partitions, q-series, and Applications", a Conference in Honor of George Andrews' 70th Birthday was held at Pennsylvania State University, December 5-7. 2008. Some information including photos appears at http://www.math.psu.edu/sellersj/ca2008/

On February 1, George Andrews will begin a two-year term as President of the American Mathematical Society. Congratulations, George!

## Topic #8 ------ OP-SF NET 16.1 ------ January 15, 2009

From: OP-SF NET Editors Subject: Obituary for Donald J. Newman

An extended obituary for Donald J. Newman (1930-2007) appears in J. Approx. Theory, **154** (2008), 37 – 58. It includes reminiscences from Lee Lorch, Leon Ehrenpreis, John Nash, Harold S. Shapiro, Lawrence Shepp, Joseph Bak, Eli Passow, Louis Ramon, Boris Shektman, Roderick Wong, Doron Zeilberger and Yuan Xu

## Topic #9 ------ OP-SF NET 16.1 ------ January 15, 2009

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 November and December 2008.

#### http://arxiv.org/abs/0812.3666

Ultraspherical type generating functions for orthogonal polynomials Authors: Nizar Demni

#### http://arxiv.org/abs/0812.0728

Note on the X\_(1)-Jacobi orthogonal polynomials Authors: W.N. Everitt

#### http://arxiv.org/abs/0812.0657

Askey-Wilson polynomials, quadratic harnesses and martingales Authors: Wlodek Bryc, Jacek Wesolowski

## http://arxiv.org/abs/0812.0063

Some Orthogonal Polynomials in Four Variables Authors: Charles F. Dunkl

### http://arxiv.org/abs/0811.3847

Asymptotics for a special solution of the thirty fourth Painleve equation Authors: A.R. Its, A.B.J. Kuijlaars, J. Ostensson

#### http://arxiv.org/abs/0811.3559

Note on the X\_(1)-Laguerre orthogonal polynomials Authors: W.N. Everitt

#### http://arxiv.org/abs/0811.2605

Bi-orthogonal systems on the unit circle, regular semi-classical weights and the discrete Garnier equations Authors: N.S. Witte

#### http://arxiv.org/abs/0811.4027

Bi-orthogonal systems on the unit circle, Regular Semi-Classical Weights and Integrable Systems - II Authors: N.S. Witte

#### http://arxiv.org/abs/0811.1715

Bergman polynomials on an Archipelago: Estimates, Zeros and Shape Reconstruction Authors: Bjorn Gustafsson, Mihai Putinar, Ed Saff, Nikos Stylianopoulos

#### http://arxiv.org/abs/0812.3071

Generalized Exponential Function and some of its Applications to Complex Systems Authors: Alexandre Souto Martinez, Rodrigo Silva Conzalez, Cesar Augusto

Authors: Alexandre Souto Martinez, Rodrigo Silva Gonzalez, Cesar Augusto Sangaletti Tercariol

## http://arxiv.org/abs/0811.1538

New biorthogonal potential--density basis functions Authors: Alireza Rahmati (Leiden Observatory), Mir Abbas Jalali (Sharif University of Technology)

#### http://arxiv.org/abs/0811.0507

Generalized Bessel function of Type D Authors: Nizar Demn

#### http://arxiv.org/abs/0812.0739

A Limit Relation for Dunkl-Bessel Functions of Type A and B Authors: Margit Rösler, Michael Voit

#### http://arxiv.org/abs/0812.2725

\$k\$-distant crossings and nestings of matchings and partitions Authors: Dan Drake, Jang Soo Kim

## http://arxiv.org/abs/0812.2050

Multipoint Schur algorithm and orthogonal rational functions: convergence properties, I Authors: L. Baratchart, S. Kupin, V. Lunot, M. Olivi

#### http://arxiv.org/abs/0812.1219

Mixed type multiple orthogonal polynomials for two Nikishin systems Authors: U. Fidalgo Prieto, A. López García, G. López Lagomasino, V.N. Sorokin

#### http://arxiv.org/abs/0811.1085

Paths and Kostka--Macdonald Polynomials Authors: Anatol N. Kirillov, Reiho Sakamot

## http://arxiv.org/abs/0812.2921

On the non-quadraticity of values of the q-exponential function and related qseries

Authors: Christian Krattenthaler (Vienna), Igor Rochev (Moscow), Keijo Vaananen (Oulu), Wadim Zudilin (Bonn)

http://arxiv.org/abs/0812.0990

Some applications of the Poisson summation formula Authors: M.L. Glasser Nikos Bagis

#### http://arxiv.org/abs/0812.0764

Eulerian quasisymmetric functions Authors: John Shareshian, Michelle L. Wachs

### http://arxiv.org/abs/0812.0726

Convexity of the zeros of some orthogonal polynomials and related functions Authors: K Jordaan, F Tookos

http://arxiv.org/abs/0811.4287

Diophantine properties for q-analogues of Dirichlet's beta function at positive integers Authors: Frederic Jouhet (ICJ), Elie Mosaki (ICJ)

#### http://arxiv.org/abs/0811.4152

Combinatorial Formulas for Macdonald and Hall-Littlewood Polynomials of Types A and C. Extended Abstract Authors: Cristian Lenart

### http://arxiv.org/abs/0811.2243

Asymptotic analysis of a family of polynomials associated with the inverse error function Authors: Diego Dominici, Charles Knessl

http://arxiv.org/abs/0811.4100

On a q-extension of Mehta's eigenvectors of the finite Fourier transform for q a root of unity Authors: Mesuma K. Atakishiyeva, Natig M. Atakishiyev, Tom H. Koornwinder

#### http://arxiv.org/abs/0811.3777

The Relationship between Tsallis Statistics, the Fourier Transform, and Nonlinear Coupling Authors: Kenric P. Nelson, Sabir Umarov

#### http://arxiv.org/abs/0811.0557

The evaluation of Tornheim double sums. Part2 Authors: Olivier Espinosa, Victor H. Moll

#### http://arxiv.org/abs/0811.0360

Generalization of the Logarithm Function and of the Exponential Function with Arbitrary Base Authors: Victor E. Vizcarra

## http://arxiv.org/abs/0812.4397

Multiplicative \$q\$-hypergeometric series arising from real quadratic fields Authors: Kathrin Bringmann, Ben Kane

http://arxiv.org/abs/0812.4296

Tsallis \$q\$-exponential describes the distribution of scientific citations - A new characterization of the impact Authors: A.D. Anastasiadis, Marcelo P. de Albuquerque, Marcio P. de Albuquerque, Diogo B. Mussi

### http://arxiv.org/abs/0812.4221

Tsallis' deformation parameter q quantifies the classical-quantum transition Authors: A.M. Kowalski, M.T. Martin, A. Plastino, L. Zunino

#### http://arxiv.org/abs/0812.2826

A Unification of Two Refinements of Euler's Partition Theorem Authors: William Y. C. Chen, Henry Y. Gao, Kathy Q. Ji, Martin Y. X. Li

http://arxiv.org/abs/0812.2754

Volumes, Traces and Zeta Functions Authors: Sergio Venturini

## http://arxiv.org/abs/0812.2321

On spectral polynomials of the Heun equation Authors: B.Shapiro, M.Tater

### http://arxiv.org/abs/0812.0779

Poset homology of Rees products, and \$q\$-Eulerian polynomials Authors: John Shareshian, Michelle L. Wachs

### http://arxiv.org/abs/0812.5090

On some definite integrals connecting with certain infinite series Authors: Ramesh Kumar muthumalai

## http://arxiv.org/abs/0812.2592

Identities for the Riemann zeta function Authors: Michael O. Rubinstein

### http://arxiv.org/abs/0812.1878

An elementary and real approach to values of the Riemann zeta function Authors: Armen Bagdasaryan

## http://arxiv.org/abs/0812.1374

Demystification of Taylor, Laurent coefficients of Lerch, Hurwitz Zeta functions and Dirichlet L-Function at Unity and Zero and their Bounds Authors: Vivek V. Rane

## http://arxiv.org/abs/0812.1303

On the Taylor Coefficients of the Hurwitz Zeta Function Authors: Khristo Boyadzhiev

#### http://arxiv.org/abs/0812.0947

Lectures on height zeta functions: At the confluence of algebraic geometry, algebraic number theory, and analysis Authors: Antoine Chambert-Loir (IRMAR)

#### http://arxiv.org/abs/0812.0385

The ubiquitous \$\zeta\$-function and some of its "usual" and "unusual" meromorphic properties Authors: Klaus Kirsten, Paul Loya, Jinsung Park

## http://arxiv.org/abs/0811.4437

Alternating Euler sums at the negative integers Authors: Khristo N. Boyadzhiev, H. Gopalkrishna Gadiyar, R. Padma

## http://arxiv.org/abs/0811.3302

The first digit frequencies of primes and Riemann zeta zeros tend to uniformity following a size-dependent generalized Benford's law Authors: Bartolo Lugue, Lucas Lacasa

#### http://arxiv.org/abs/0811.2772

General moment theorems for non-distinct unrestricted partitions Authors: Michael Coons, Klaus Kirsten

#### http://arxiv.org/abs/0811.2644

Regularized Euler product for the zeta function and the Birch and Swinnerton-Dyer and the Beilinson conjecture Authors: Minoru Fujimoto, Kunihiko Uehara

#### http://arxiv.org/abs/0811.0042

Summation of Hyperharmonic Series Authors: István Mező

## http://arxiv.org/abs/0811.1355

Matrix approach to discrete fractional calculus II: partial fractional differential equations Authors: Igor Podlubny, Aleksei V. Chechkin, Tomas Skovranek, YangQuan Chen, Blas M. Vinagre Jara

http://arxiv.org/abs/0812.1766

On harmonic binomial series Authors: Mark W. Coffey

http://arxiv.org/abs/0811.0791

The Hilbert Transform of a Measure Authors: Alexei Poltoratski, Barry Simon, Maxim Zinchenk

## Topic #10 ------ OP-SF NET 16.1 ------ January 15, 2009

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 140 members scattered about in more than 20 countries. Whatever your specialty might be, we welcome your participation in this classical, and yet modern, topic. Our WWW home page is:

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

This is a convenient point of entry to all the services provided by the Group. Our Webmaster is Bonita Saunders (bonita.saunders@nist.gov).

The Activity Group sponsors OP-SF NET, which is transmitted periodically by SIAM. It is provided as a free public service; membership in SIAM is not required. The OP-SF Net Editors are Diego Dominici (dominicd@newpaltz.edu) and Martin Muldoon (muldoon@yorku.ca).

To receive the OP-SF NET, send your name and email address to poly-request@siam.org.

Back issues can be obtained at the WWW addresses: http://staff.science.uva.nl/~thk/opsfnet http://www.math.ohio-state.edu/JAT/DATA/OPSFNET/opsfnet.html http://cio.nist.gov/esd/emaildir/lists/opsfnet/maillist.html

For several years the Activity Group sponsored a printed Newsletter, most recently edited by Rafael Yanez. Back issues are accessible at: http://www.mathematik.uni-kassel.de/~koepf/siam.html

Given the widespread availability of email and the Internet, the need for the printed Newsletter has decreased. Discussions are underway concerning whether an annual printed Newsletter or Annual Report should be instituted.

SIAM has several categories of membership, including low-cost categories for students and residents of developing countries. 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 WWW : http://www.siam.org http://www.siam.org/membership/outreachmem.htm

Finally, the Activity Group operates an email discussion group, called OP-SF Talk. To subscribe, send the email message

subscribe opsftalk Your Name

to listproc@nist.gov. To contribute an item to the discussion, send email to opsftalk@nist.gov. The archive of all messages is accessible at: http://math.nist.gov/opsftalk/archive

## Topic #11 ------ OP-SF NET 16.1 ------ January 15, 2009

From: OP-SF NET Editors

Subject: Submitting contributions to OP-SF NET

To contribute a news item to OP-SF NET, send email to poly@siam.org with a copy to one of the OP-SF Editors dominicd@newpaltz.edu or muldoon@yorku.ca. Contributions to OP-SF NET 16.2 should be sent by March 1, 2009.

OP-SF NET is a forum 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, job openings.

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http://math.nist.gov/opsfnet/archive
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 (2008-2010) are: Francisco J. Marcellán , Chair Peter A. Clarkson, Vice Chair Daniel W. Lozier, Secretary Peter A. McCoy, Program Director The appointed officers are: Diego Dominici, OP-SF NET co-editor Martin Muldoon, OP-SF NET co-editor

Bonita Saunders, Webmaster