O P - S F N E T - Volume 18, Number 2 – March 15, 2011

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The Electronic News Net of the
SIAM Activity Group on Orthogonal Polynomials and Special Functions
http://math.nist.gov/opsf/
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Today's Topics

Calendar of Events:

April 6-8, 2011
Special Functions in the 21st Century: Theory and Applications (dedicated to Frank W. J. Olver), Washington, DC, USA 17.6 #3
http://math.nist.gov/~DLozier/SF21

April 6-8, 2011
Vicious Walkers and Random Matrices, École de Physique des Houches, French Alpes, May 16-27, 2011
http://www-fourier.ujf-grenoble.fr/~peche/Houches.html

May 17-21, 2011
International Symposium in Approximation Theory, Nashville, Tennessee, USA
http://www.math.vanderbilt.edu/~Nashville2011/

May 30- June 3, 2011
International Conference on Asymptotics and Special Functions, Hong Kong
http://www6.cityu.edu.hk/rcms/ICASF2011/index.html

June 5-11, 2011

Computational Complex Analysis and Approximation Theory (CCAAT 2011). in honor of Professor Nicolas Papamichael, Protaras, Cyprus
http://www.cyprusconferences.org/ccaat/

June 17-23, 2011

"Painlevé equations and related topics", St. Petersburg, Russia
http://www.pdmi.ras.ru/EIMI/2011/PC/index.html

June 27-29, 2011

CECAM workshop "Spin Networks in Atomic and Molecular Physics, Quantum Chemistry and Quantum Computing ", Zurich, Switzerland
http://www.cecam.org/workshop-521.html

July 3-8, 2011

ESF Research Conference: Completely Integrable Systems and Applications, Vienna, Austria
http://www.esf.org/activities/esf-conferences/details/2011/confdetail369.html

July 3-9, 2011

22th International Workshop on Operator Theory and Applications, Universidad de Sevilla, Seville, Spain.
http://congreso.us.es/iwota2011/

July 4-14, 2011

Foundations of Computational Mathematics FOCM'11. Budapest, Hungary, including minisymposia on “Special Functions and Orthogonal Polynomials”, “Asymptotic analysis and high oscillation” and “Approximation theory”. 17.4 #2
http://www.damtp.cam.ac.uk/user/na/FoCM11/

July 18-22, 2011

ICIAM 2011 - 7th International Congress on Industrial and Applied Mathematics, Vancouver, Canada (including minisymposium on “Painlevé equations”) 17.6 #6
http://www.iciam2011.com

July 24-29, 2011

Complex Analysis, Operator and Approximation Theories, Conference dedicated to the memory of Franz Peherstorfer, Linz, Austria
http://www.caota2011.jku.at/

July 28-30, 2011

International Conference on Special Functions & their Applications (ICSFA 2011), (10th Annual Conference of SSFA), Jodhpur, India
http://www.ssfaindia.webs.com/conf.htm

August 8-13, 2011
"Formal and Analytic Solutions of Differential and Difference Equations", Bedlewo, Poland
http://www.impan.pl/~fasde/

August 15-19, 2011
Special Functions and Orthogonal Polynomials of Lie Groups and their Applications, Decin, Czech Republic, 15-19 August, 2011
http://www.imath.kiev.ua/~maryna/conf2011.html

August 22-26, 2011
Paul Turán Memorial Conference, Budapest, Hungary
http://www.renyi.hu/~turan100/

August 22-27, 2011
8th ISAAC Congress, Moscow, Russian Federation 18.1 #3
http://www.isaac2011.org/

August 29 – September 2, 2011
OPSFA-11: 11-th International Symposium on Orthogonal Polynomials, Special Functions and Applications, to celebrate Francisco (Paco) Marcellán´s 60-th birthday, Madrid, Spain 17.4 #1
http://gama.uc3m.es/opsfa11/

September 11-17, 2011
Fourteenth International Conference on Functional Equations and Inequalities (14th ICFEI), Będlewo, Poland
http://mat.ap.krakow.pl/icfei/14ICFEI/index.php

September 19 - 25, 2011
9th International Conference of Numerical Analysis and Applied Mathematics (ICNAAM), Hilkidiki, Greece,
http://www.icnaam.org/

Topic #1 ---------- OP-SF NET 18.2 ---------- March 15, 2011

From: Francisco J. Marcellán pacomarc@ing.uc3m.es
Subject: Letter from the Chair

Dear SIAG-OPSF Members

The new board consisting of **Francisco (Paco) Marcellán**, Chair, **Jeff Geronimo**, Vice Chair, **Peter Clarkson**, Secretary, and **Diego Dominici**, Program Director, started its activity on January 1, 2011 for a new three-year period. Our first activity was a conference call with Jim Crowley, SIAM Executive Director, Susan Whitehouse, Membership Manager, and Linda Thiel, Director of Programs and Services. Before the call, the board members were given information about SIAM activities and our

activity group. A summary of the information is as follows;

1. SIAG/OPSF is the second smallest activity group.

2. The percentage of SIAG/OPSF student members (29%) is lower than for SIAM overall (40%).

3. The percentage of women in SIAG/OPSF (10%) is lower than for SIAM overall (16%).

4. The percentage of SIAG/OPSF members from outside the US (19%) is lower than for SIAM overall (31%).

5. The percentage of members working in academia in SIAG/OPSF (73%) is slightly lower than in SIAM overall (75%).

6. The percentages of SIAG/OPSF members in math sciences (69%) and physics (6%) are higher than for SIAM overall (math science 58%, physics 2%). The percent of SIAG/OPSF members in engineering (11%) and computer science (5%) is lower that for SIAM overall (engineering 16%, computer science 12%).

The board members discussed possible ways of increasing membership by making members aware of:

a) Reciprocal aggreements with other societies (http://www.siam.org/membership/individual/reciprocal.php).

b) Student memberships and postdoctoral memberships which have substantial discounts. (http://www.siam.org/membership/individual)

c) The Gene Golub SIAM summer school (see http://www.siam.org/students/summer.php as a reference). The Board will consider making a proposal during this three-year period.

d) Travel grants to OPSFA meetings (we have received 4 grants for the meeting in Leganes for 550 USD each) and developing closer cooperation between our activity group and people involved in the organization of OPSFA.

e) Set up a website at SIAM for news about the activity group and related matters. The new website will be at http://wiki.siam.org/siag-os/index.php/Main_Page, so be sure to bookmark it for the future when it comes up (hopefully soon!).

We appreciate very much your ideas and cooperation during this exciting period.

Topic #2 ---------- OP-SF NET 18.2 ---------- March 15, 2011

From: Martin Muldoon muldoon@yorku.ca
Subject: Ismail and Stanton honoured at q-Series 2011

An International Conference on **q-Series, Partitions and Special Functions** was held at Georgia Southern University, Statesboro, Georgia, USA during March 14-16, 2011. This conference was the continuation of a series of successful international conferences on Partition Theory, q-Series, Special Functions and their applications. It also honoured Mourad Ismail and Dennis Stanton for their valuable contributions to Number Theory and Special Functions throughout their careers.

Over 50 people attended. As well as the USA, there was representation from Australia, Austria, Canada, France, Germany, Korea, Portugal, South Africa and Sweden.

Speaker after speaker recounted when they had first met Mourad and/or Dennis and the way in which their work was influenced by them. These accounts provided a vivid picture of a large and multiply connected "family" consisted of members with complementary strengths. People like George Andrews and Dick Askey, who led the developments in these research areas over the past four decades and knew the honorees as students were clearly delighted by the continuing vitality of these areas as evidenced by the large number of young people giving talks.

The theme of family was underlined by the gifts presented to Dennis and Mourad, Each of them was given a large chart of his mathematical lineage (from the Mathematics Genealogy Project) as well as a framed display of photos of most of his own doctoral students.

The plenary speakers were George Andrews, Richard Askey, Bruce Berndt, Christian Krattenthaler, Ken Ono, Peter Paule and Doron Zeilberger.

There were many tributes to Andrew Sills and the other organizers for handling the arrangements in a smooth an efficient way.

Further information is available at the conference web site:
http://math.georgiasouthern.edu/~hwang/index_files/q_web/index.htm

Topic #3 ---------- OP-SF NET 18.2 ---------- March 15, 2011

From: Alex Ignjatovic ignjat@cse.unsw.edu.au
Subject: Some questions related to orthogonal polynomials

[This item was circulated to OP-SF NET on February 17. Because it links to a connected account of a number of problems likely to be of interest to several readers, we are taking the liberty of adding it here. Eds.]

I would be very grateful to hear where I could find solutions to any of the following questions related to orthogonal polynomials (or, if they are open, any ideas how to tackle these problems or even if they "feel" likely to be true or not):

http://www.cse.unsw.edu.au/~ignjat/diff/CDQestions.pdf

Topic #4 ---------- OP-SF NET 18.2 ---------- March 15, 2011

From: Peter Clarkson P.A.Clarkson@kent.ac.uk
Subject: SIAM News

SIAM produces a regular newsletter which is distributed to members and also available online (regardless of whether you're a member of SIAM or not), see

http://www.siam.org/news/

The Board of our SIAG wants to enhance the visibility of the SIAG and the SIAM newsletter provides an opportunity to do so. In particular, the SIAM Newsletter includes

1) technical overview articles written by experts in a wide range of disciplines
2) reports of progress and breakthroughs in research

If you have an idea for an article to be published in the SIAM newsletter then please contact me, as the SIAG's contact with SIAM News, to discuss it.

Topic #5 ---------- OP-SF NET 18.2 ---------- March 15, 2011

From: OP-SF Net Editors
Subject: Chihara's "Orthogonal Polynomials" republished by Dover

This information is from the web site
http://store.doverpublications.com/0486479293.html

Theodore S. Chihara
An Introduction to Orthogonal Polynomials
ISBN 0486479293, 272 pages, $19.95

Assuming no further prerequisites than a first undergraduate course in real analysis, this concise introduction covers general elementary theory related to orthogonal polynomials. It includes necessary background material of the type not usually found in the standard mathematics curriculum. Suitable for advanced undergraduate and graduate courses, it is also appropriate for independent study.
Topics include the representation theorem and distribution functions, continued fractions and chain sequences, the recurrence formula and properties of orthogonal polynomials, special functions, and some specific systems of orthogonal polynomials. Numerous examples and exercises, an extensive bibliography, and a table of recurrence formulas supplement the text.

Reprint of the Gordon and Breach Science Publishers, New York, 1978 edition.

Topic #6 ---------- OP-SF NET 18.2 ---------- March 15, 2011

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 January and February 2011.

http://arxiv.org/abs/1101.0983
Proof of some conjectures of Z.-W. Sun on congruences for Apery polynomials
Authors: Victor J. W. Guo, Jiang Zeng

http://arxiv.org/abs/1101.1587
Adaptive and anisotropic piecewise polynomial approximation
Authors: Albert Cohen, Jean-Marie Mirebeau

http://arxiv.org/abs/1101.1683
A Lie theoretic interpretation of multivariate hypergeometric polynomials
Authors: Plamen Iliev

http://arxiv.org/abs/1101.1798
On Krawtchouk polynomials
Authors: Rodney Coleman (LJK)

http://arxiv.org/abs/1101.1808
A factorization method for q-Racah polynomials
Authors: Fabio Scarabotti

http://arxiv.org/abs/1101.1817
Orthogonal polynomials on a bi-lattice
Authors: Christophe Smet, Walter Van Assche

http://arxiv.org/abs/1101.1923
Concentration for noncommutative polynomials in random matrices
Authors: Mark W. Meckes, Stanislaw J. Szarek

http://arxiv.org/abs/1101.1946
On sums of Apéry polynomials and related congruences
Authors: Zhi-Wei Sun

http://arxiv.org/abs/1101.2335
On a novel iterative method to compute polynomial approximations to Bessel functions of the first kind and its connection to the solution of fractional diffusion/diffusion-wave problems
Authors: Santos Bravo Yuste, Enrique Abad

http://arxiv.org/abs/1101.2640
Bivariate second--order linear partial differential equations and orthogonal polynomial solutions
Authors: I. Area, E. Godoy, A. Ronveaux, A. Zarzo

http://arxiv.org/abs/1101.2875
On q-Hermite polynomials and their relationship with some other families of orthogonal polynomials
Authors: Paweł J. Szabłowski

http://arxiv.org/abs/1101.2982
Multiple Meixner-Pollaczek polynomials and the six-vertex model
Authors: Martin Bender, Steven Delvaux, Arno B.J. Kuijlaars

http://arxiv.org/abs/1101.3597
Four families of orthogonal polynomials of C2 and symmetric and antisymmetric generalizations of sine and cosine functions
Authors: Lenka Motlochova, Jiri Patera

http://arxiv.org/abs/1101.3730
An ensemble related to discrete orthogonal polynomials and its application to tilings of a half-hexagon
Authors: Uwe Schwerdtfeger

http://arxiv.org/abs/1101.4060
The Sagan-Savage Lucas-Catalan Polynomials Have Positive Coefficients
Authors: Shalosh B. Ekhad

http://arxiv.org/abs/1101.4370
Global Asymptotics of the Meixner Polynomials
Authors: X.-S. Wang, R. Wong

http://arxiv.org/abs/1101.4371
Asymptotics of Orthogonal Polynomials via Recurrence Relations
Authors: X.-S. Wang, R. Wong

http://arxiv.org/abs/1101.4469
An exactly solvable spin chain related to Hahn polynomials
Authors: N.I. Stoilova, J. Van der Jeugt

http://arxiv.org/abs/1101.4894
Large Degree Asymptotics of Generalized Bessel Polynomials
Authors: José Luis López, Nico M. Temme

http://arxiv.org/abs/1101.5386
Generalized Legendre polynomials and related congruences modulo p^2
Authors: Zhi-Hong Sun

http://arxiv.org/abs/1101.5584
On orthogonal polynomials spanning a non-standard flag
Authors: David Gomez-Ullate, Niky Kamran, Robert Milson

http://arxiv.org/abs/1102.0055
Minimal Cubature rules and polynomial interpolation in two variables
Authors: Yuan Xu

http://arxiv.org/abs/1102.0571
Generalization of the Macdonald formula for Hall-Littlewood polynomials
Authors: Inka Klostermann

http://arxiv.org/abs/1102.0672
On the density of polynomials in some $L^2(M)$ spaces
Authors: Sergey M. Zagorodnyuk

http://arxiv.org/abs/1102.0792
Large deviations for disordered bosons and multiple orthogonal polynomial ensembles
Authors: Peter Eichelsbacher, Jens Sommerauer, Michael Stolz

http://arxiv.org/abs/1102.0812
The Exceptional (X_{\ell}) (q)-Racah Polynomials
Authors: Satoru Odake, Ryu Sasaki

http://arxiv.org/abs/1102.0921
Riordan arrays, orthogonal polynomials as moments, and Hankel transforms
Authors: Paul Barry

http://arxiv.org/abs/1102.1349
Double scaling limit for modified Jacobi-Angelesco polynomials
Authors: Klaas Deschout, Arno B.J. Kuijlaars (K.U.Leuven, Belgium)

http://arxiv.org/abs/1102.1493
Asymptotic estimates for Apostol-Bernoulli and Apostol-Euler polynomials
Authors: Luis M. Navas, Francisco J. Ruiz, Juan L. Varona

http://arxiv.org/abs/1101.0984
Mathematics and Economics of Leonid Kantorovich
Authors: S.S. Kutateladze

http://arxiv.org/abs/1101.3688
Transformations and invariants for dihedral Gauss hypergeometric functions
Authors: Raimundas Vidunas

http://arxiv.org/abs/1101.0493
Monodromy of A-hypergeometric functions
Authors: Frits Beukers

http://arxiv.org/abs/1102.2612
Hypergeometric type operators and related quasi-exactly solvable systems
Authors: Nicolae Cotfas, Liviu Adrian Cotfas

http://arxiv.org/abs/1102.3003
Acceleration of generalized hypergeometric functions through precise remainder asymptotics
Authors: Joshua L. Willis

http://arxiv.org/abs/1102.5219
Differentiation by integration using orthogonal polynomials, a survey
Authors: Enno Diekema, Tom H. Koornwinder

http://arxiv.org/abs/1102.1578
Orthogonal matrix polynomials satisfying differential equations with recurrence coefficients having non-scalar limits
Authors: Jorge Borrego, Mirta Castro, Antonio J. Durán

http://arxiv.org/abs/1101.4950
Arc Spaces and Rogers-Ramanujan Identities
Authors: Clemens Bruschek, Hussein Mourtada, Jan Schepers

http://arxiv.org/abs/1101.4567
On a classical limit of q-deformed Whittaker functions
Authors: Anton Gerasimov, Dimitri Lebedev, Sergey Oblezin

http://arxiv.org/abs/1102.1444
Caputo q-Fractional Initial Value Problems and a q-Analogue Mittag-Leffler Function
Authors: Thabet Abdeljawad, Dumitru Baleanu

http://arxiv.org/abs/1102.2014
Linear independence measures for values of certain q-series
Authors: Igor Rochev

http://arxiv.org/abs/1102.2510
Note on the location of zeros of polynomials
Authors: Josep Rubió-Massegú

http://arxiv.org/abs/1102.2036
Hermite Polynomials in Dunkl-Clifford Analysis
Authors: Minggang Fei, Paula Cerejeiras, Uwe Kähler

http://arxiv.org/abs/1102.2723
A question by Chihara about shell polynomials and indeterminate moment problems
Authors: Christian Berg (university of Copenhagen), Jacob S. Christiansen (University of Copenhagen)

http://arxiv.org/abs/1102.3517
On distribution of zeros of random polynomials in complex plane
Authors: Ildar Ibragimov, Dmitry Zaporozhets

http://arxiv.org/abs/1102.3707
Wavelets from Laguerre polynomials and Toeplitz-type operators
Authors: Ondrej Hutník

http://arxiv.org/abs/1102.4655
Characteristic Polynomials of Random Matrices and Noncolliding Diffusion Processes
Authors: Makoto Katori

http://arxiv.org/abs/1102.5669
Zeros of the exceptional Laguerre and Jacobi polynomials
Authors: C.-L. Ho, R. Sasaki

http://arxiv.org/abs/1102.1156
La série entière $1+\frac z{\Gamma(1+i)}+\frac{z^2}{\Gamma(1+2i)}+\frac{z^3}{\Gamma(1+3i)}+...$ possède une frontière naturelle~!
Authors: Changgui Zhang

http://arxiv.org/abs/1101.4257
Fractional part integral representation for derivatives of a function related to ln Gamma(x+1)
Authors: Mark W. Coffey

http://arxiv.org/abs/1101.4698
An inequality involving the gamma and digamma functions
Authors: Feng Qi, Bai-Ni Guo

http://arxiv.org/abs/1101.4624
Turán determinants of Bessel functions
Authors: Árpád Baricz, Tibor K. Pogány

http://arxiv.org/abs/1101.5904
Fractional h-difference equations arising from the calculus of variations
Authors: Rui A. C. Ferreira, Delfim F. M. Torres

http://arxiv.org/abs/1101.1594
Multiple Dedekind Zeta Functions
Authors: Ivan Horozov

http://arxiv.org/abs/1101.3197
Large gaps between consecutive zeros on the critical line of the Riemann zeta-function
Authors: Johan Bredberg

http://arxiv.org/abs/1101.4786
The Riemann zeta in terms of the dilogarithm
Authors: Sergio Albeverio, Claudio Cacciapuoti

http://arxiv.org/abs/1101.5722
Evaluation of some second moment and other integrals for the Riemann, Hurwitz, and Lerch zeta functions
Authors: Mark W. Coffey

http://arxiv.org/abs/1101.3121
Quantifying momenta through the Fourier transform
Authors: B. M. Rodr\'\iguez-Lara

http://arxiv.org/abs/1102.2680
Character analogues of Ramanujan type integrals involving the Riemann Ξ-function
Authors: Atul Dixit

http://arxiv.org/abs/1102.2354
A diffusion equation for the density of the ratio of Gaussian variables and the numerical inversion of Laplace transform
Authors: Piero Barone

http://arxiv.org/abs/1102.5255
Singular matrix Darboux transformations in the inverse scattering method
Authors: A. A. Pecheritsin, A. M. Pupasov, Boris F. Samsonov

Topic #7 ---------- OP-SF NET 18.2 ---------- March 15, 2011

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, 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) and Martin Muldoon (muldoon@yorku.ca).

Back issues of OP-SF NET can be obtained at the WWW addresses:
http://staff.science.uva.nl/~thk/opsfnet
http://math.nist.gov/~DLozier/OPSFnet/

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

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. To contribute an item to the discussion, send email to siam-opsf@siam.org .The archive of all messages can be found by following links at http://siam.org/activity/listservs.php. 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. 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

Topic #8 ---------- OP-SF NET 18.2 ---------- March 15, 2011

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 or muldoon@yorku.ca .
Contributions to OP-SF NET 18.2 should be sent by May 1, 2011.

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 .

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 (2011-2013) are:
Chair: Francisco Marcellán
Vice Chair: Jeffrey S. Geronimo
Program Director: Diego Dominici
Secretary: Peter Clarkson

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