

OP - SF NET - Volume 19, Number 6 – November 15, 2012

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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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Calendar of Events:

November 16-18, 2012

Special Functions, Partial Differential Equations and Harmonic Analysis, a conference in honor of Calixto P. Calderón, Chicago, IL, USA 19.5 #3

<http://www.roosevelt.edu/calderon>

January 9-12, 2013

Joint Mathematics Meetings, San Diego California, USA, including special sessions on “q-Series in Mathematical Physics and Combinatorics” (organized by Mourad Ismail), “Continued Fractions” (organized by James McLaughlin and Nancy J. Wyshinski), “Difference Equations and Applications” (organized by Michael Radin) and “The Influence of Ramaujan on his 125th Birthday” (organized by George Andrews, Bruce Berndt and Ae Ja Yee)

<http://jointmathematicsm meetings.org/jmm>

February 20-21, 2013

Conference on Special Functions and Orthogonal Polynomials, Riyadh, Saudi Arabia

19.6 #1

<http://spconf.ksu.edu.sa/node/69>

March 24-29, 2013

12th International Symposium on Orthogonal Polynomials, Special Functions and Applications (OPSFA-12), Sousse, Tunisia

19.1, #2 19.3, #4 19.5 #1 19.6 #1

<http://matematicas.uc3m.es/index.php/seminarios/intern-meet-menu/12th-opsfa>

June 3-7, 2013

International Linear Algebra Society (ILAS) 2013 meeting, Providence Rhode Island, USA, including an invited minisymposium on Matrices and Orthogonal Polynomials organized by J.S. Geronimo, F. Marcellán and L. Reichel

<http://ilas2013.com>

June 12-15, 2013

The Third International Conference: Nonlinear Waves --- Theory and Applications, Beijing, China

<http://lsec.cc.ac.cn/~icnwt3/>

July 1- 5, 2013

The 6th Pacific RIM Conference on Mathematics, including Session on "Special Functions and Orthogonal Polynomials", Sapporo City, Japan

19.5 #5

<http://www.math.sci.hokudai.ac.jp/sympo/130701/sessions.html>

July 1- 6, 2013

Erdős Centennial Conference, Budapest, Hungary

<http://www.renyi.hu/conferences/erdos100/>

July 8-12, 2013

SIAM Annual Meeting, San Diego, California, USA (including "Orthogonal Polynomials and Special Functions" as one of 17 themes)

18.5 #3

<http://www.siam.org/meetings/an13/>

July 15-19, 2013

Workshop "Elliptic Integrable Systems and Hypergeometric Functions", Leiden, The Netherlands

19.5 #6

www.lorentzcenter.nl/lc/web/2013/541/info.php3?wsid=541&venue=Oort

July 21-26, 2013

PODE Progress on Difference Equations, Pialystok, Poland

<http://katmat.pb.bialystok.pl/pode13/>

Topic #1 ----- OP-SF NET 19.6 ----- November 15, 2012

From: OP-SF NET Editors

Subject: OPSFA-12, Tunisia – Extension of Deadlines

As previously announced in OP-SF NET, the next International Symposium on Orthogonal Polynomials, Special Functions and Applications (OPSFA-12) will be held in Sousse, Tunisia, from March 24 to March 29, 2013.

The deadline for early registration and submission of abstracts has been extended to December 31, 2012.

Further information is available at the web site:

<http://matematicas.uc3m.es/index.php/seminarios/intern-meet-menu/12th-opsfa>

Topic #2 ----- OP-SF NET 19.6 ----- November 15, 2012

From: Walter Van Assche Walter.VanAssche@wis.kuleuven.be

Subject: Call for Organization of OPSFA-13

The Steering Committee of the international symposia “Orthogonal Polynomials, Special Functions and Applications” has opened a call for the organization of the next international symposium on “Orthogonal Polynomials, Special Functions and Applications” (OPSFA-13), to be held preferably in 2015. Please inform Walter Van Assche (walter@wis.kuleuven.be) if you are willing to organize OPSFA-13. Please provide name of the contact person, place where the conference will be organized and a suggestion of the date. All proposals will be evaluated by the steering committee and the final decision will be announced at the upcoming OPSFA-12 meeting in Tunisia.

The Steering Committee for OPSFA consists of 3 local organizers of the past 5 OPSFA meetings and a representative of the SIAM Activity Group “Orthogonal Polynomials and Special Functions” (not necessarily the chair). This Steering Committee was founded during the OPSFA-11 meeting in Leganés in 2011 and its main task is to coordinate the international meetings in the OPSFA community, such as the biannual international symposium and summer schools. Presently the Steering Committee consists of

Francisco Marcellán (SIAG)

Guillermo López Lagomasino (OPSFA-11)

Walter Van Assche (OPSFA-10)

Christian Berg (OPSFA-7)

Christian Berg will step down in 2013 and will be replaced by one of the organizers of the OPSFA-12 meeting in Tunisia (March 2013).
Go to <http://wis.kuleuven.be/events/OPSFA/> for a history of the OPSFA conferences.

Topic #3 ----- OP-SF NET 19.6 ----- November 15, 2012

From: Guillermo López Lagomasino lago@mathuc3m.es
Subject: Andrei Aleksandrovich Gonchar 1931-2012

On the morning of October 10, 2012, Academician Andrei Aleksandrovich Gonchar passed away at the age of 80. Gonchar was born on November 21, 1931, in the city of St. Petersburg, Russia. He graduated from Moscow State University in 1954, defended his Candidate's (Ph. D.) thesis at the same university in 1957, under the supervision of S.N. Mergelyan, and defended his doctoral dissertation (D. Sc.) at the Steklov Mathematical Institute in 1964. Since 1972 he headed the section of Complex Analysis at Steklov. He became a corresponding member of the USSR Academy of Science in 1974 and a full member in 1987.

Gonchar's contributions involve a wide circle of problems in rational and harmonic approximation, convergence of continued fractions, classes of quasi-analytic functions, asymptotic properties of orthogonal polynomials, and potential theory. Of particular impact have been his results concerning inverse type theorems in the theory of Padé approximation, the study of connections between the rate of convergence of best rational approximation and the analytic properties of the function being approximated, and his pioneering work using potential theory in the presence of an external field to obtain the asymptotic behavior of classes of orthogonal polynomials and the exact rate of convergence of best rational approximants. Gonchar was the founder of one of the leading scientific schools in Russia. His students include many Ph. D. and D. Sc. mathematicians. He was a defender of the classical analysts and his works were greatly influenced by them. The courses he taught at the university were brilliantly expounded and his lectures organized in a masterly way with great clarity, order, and a wealth of ideas.

After the collapse of the Soviet Union, as Vice-President of the Russian Academy of Science (1991-1998), he played a major role in preserving the high quality of Russian mathematics by organizing the Russian Foundation for Basic Research. For over 25 years, he was the Editor-in-Chief of *Matematicheski Sbornik*, the oldest Russian mathematical journal.

Gonchar was not only a great scientist and an excellent scholar, but also a remarkable human being. He was distinguished by his warmth and concern for all of those that surrounded him.

Topic #4 ----- OP-SF NET 19.6 ----- November 15, 2012

From: OP-SF NET Editors

Subject: Fellows of the American Mathematical Society

The American Mathematical Society has announced its inaugural list of Fellows. The fellows program recognizes members who have made outstanding contributions to the creation, exposition, advancement, communication, and utilization of mathematics. See

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

Fellows who have contributed to the areas of special functions and orthogonal polynomials include George E. Andrews, Richard Askey, Bruce Berndt, David Bressoud, Percy Deift, Peter Duren, Christian Krattenthaler, Arno Kuijlaars, Lee Lorch, Doron Lubinsky, Ian G. Macdonald, Stephen C. Milne, Donald St. P. Richards, Barry Simon, Dennis Stanton and Doron Zeilberger.

Topic #5 ----- OP-SF NET 19.6 ----- November 15, 2012

From: OP-SF NET Editors

Subject: Jaromír Vosmanský 1934-2012

[We thank Zuzana Došlá for some of the information given here.]

doc RNDr. Jaromír Vosmanský, CSc, known as Jarek to his friends, died in Brno, Czech Republic on August 15, 2012, after a long illness.

He was born October 11, 1934 in Neubuzi, district of Zlin, Czechoslovakia, and studied at the secondary school in Zlin. Then he studied mathematics and physics at the Faculty of Science of what is now Masaryk University in Brno. He became a student of Otakar Borůvka, a major figure in Czechoslovak mathematics who created a school of differential equations in Brno in the 1950s. He was awarded a doctorate in 1969 for work on the question of getting higher monotonicity properties of solutions (and their zeros) of the differential equation $y'' + q(t)y = 0$, as a consequence of assuming similar properties of $q(t)$, extending work of L. Lorch and P. Szego on this subject. This was applied, in particular, to the zeros of Bessel functions and their derivatives. Jarek also worked on general questions concerning transformation theory of differential equations and the idea of principal pairs of solutions.

Vosmanský did important work in the organizing of conferences, in particular the Equadiff series of Czechoslovak Conferences on Differential Equations and their Applications. He was a most generous host on the occasions when these conferences were held in Brno in

1973, 1985, 1997 and 2009, and was an editor of several Proceedings arising from these (international) conferences. He was managing editor of the journal Archivum Mathematicum (Brno) for more than ten years.

Jarek had many hobbies – hunting, classical music, gardening. He played the double-bass in the dulcimer (cembalo) group of the Faculty of Science more than fifty years.

Jarek is survived by his wife Gabi. He will be missed by all those who had the good fortune to know him.

Topic #6 ----- OP-SF NET 19.6 ----- November 15, 2012

From: OP-SF NET Editors

Subject: Discount on Ismail book on Orthogonal Polynomials

The British web site of Cambridge University Press is offering over 60% discount (£21.20 rather than £57, until March 1, 2013) on Mourad Ismail's book

“Classical and Quantum Orthogonal Polynomials in One Variable”

paperback edition, 2009. See

<http://www.cambridge.org/gb/knowledge/isbn/item2704167/>

Topic #7 ----- OP-SF NET 19.6 ----- November 15, 2012

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 2012.

<http://arxiv.org/abs/1207.6861>

Absence of Zeros and Asymptotic Error Estimates for Airy and Parabolic Cylinder Functions

Felix Finster, Joel Smoller

<http://arxiv.org/abs/1204.2012>

Asymptotic approximations to the Hardy-Littlewood function

Alexey Kuznetsov

<http://arxiv.org/abs/1209.6366>

Strong asymptotics of the orthogonal polynomial with respect to a measure supported on the plane

Ferenc Balogh, Marco Bertola, Seung Yeop Lee, Kenneth D. T-R McLaughlin

<http://arxiv.org/abs/1210.0041>

Definite Integrals using Orthogonality and Integral Transforms

Howard S. Cohl, Hans Volkmer

<http://arxiv.org/abs/1210.0207>

Confluence of apparent singularities in multi-indexed orthogonal polynomials: the Jacobi case

C.-L. Ho, R. Sasaki, K. Takemura

<http://arxiv.org/abs/1210.1936>

On a power series involving classical orthogonal polynomials

Paulina Marian, Tudor A. Marian

<http://arxiv.org/abs/1210.2129>

DJKM algebras and non-classical orthogonal polynomials

Ben Cox, Vyacheslav Futorny, Juan A. Tirao

<http://arxiv.org/abs/1210.2199>

Numerical solution of Riemann--Hilbert problems: random matrix theory and orthogonal polynomials

Sheehan Olver, Thomas Trogdon

<http://arxiv.org/abs/1210.2842>

A basic class of symmetric orthogonal polynomials of a discrete variable

Mohammad Masjed-Jamei, Iván Area

<http://arxiv.org/abs/1210.3958>

A hypergeometric function transform and matrix-valued orthogonal polynomials

Wolter Groenevelt, Erik Koelink

<http://arxiv.org/abs/1209.3941>

Laurent Polynomials, GKZ-hypergeometric Systems and Mixed Hodge Modules

Thomas Reichelt

<http://arxiv.org/abs/1209.3971>

NumExp: Numerical epsilon expansion of hypergeometric functions

Zhi-Wei Huang, Jueping Liu

<http://arxiv.org/abs/1210.6126>

Ramanujan's cubic transformation inequalities for zero-balanced hypergeometric functions

Miao-Kun Wang, Yu-Ming Chu, Ye-Ping Jiang

<http://arxiv.org/abs/1210.6400>

Exponential sums and finite field q -hypergeometric functions
Alan Adolphson

<http://arxiv.org/abs/1210.7259>

$W_{(\alpha, \beta)}^{(\gamma, \delta)}(p, q)$ -deformed Witt algebra: induced deformed oscillator, associated hypergeometric functions, deformed states and matrix elements
S. Arjika, D. Ousmane Samary, E. Baloitcha, M. N. Hounkonnou

<http://arxiv.org/abs/1209.5088>

q -Bessel Fourier Transform and Variation Diminishing kernel
Lazhar Dhaouadi, Hedi Elmonser

<http://arxiv.org/abs/1210.1740>

Finite-dimensional irreducible modules of the universal Askey-Wilson algebra
Hau-wen Huang

<http://arxiv.org/abs/1210.3010>

Dunkl Operators and Related Special Functions
Charles F. Dunkl

<http://arxiv.org/abs/1210.1177>

Vector-valued polynomials and a matrix weight function with B2-action
Charles F. Dunkl

<http://arxiv.org/abs/1210.5305>

A generalization of the Mehta-Wang determinant and Askey-Wilson polynomials
Masao Ishikawa, Hiroyuki Tagawa, Jiang Zeng

<http://arxiv.org/abs/1209.1036>

Bessel Integrals, Periods and Zeta Numbers
Jean Desbois, Stephane Ouvry

<http://arxiv.org/abs/1209.1329>

An explicit formula for the linearization coefficients of Bessel polynomials II
Mohamed Jalel Atia

<http://arxiv.org/abs/1209.1547>

Numerical Calculation of Bessel Functions
Charles Schwartz

<http://arxiv.org/abs/1209.4919>

On certain integral functionals of squared Bessel processes
Umut Çetin

<http://arxiv.org/abs/1209.5114>

Symbolic methods for the evaluation of sum rules of Bessel functions
D. Babusci, G. Dattoli, K. Gorska, K. A. Penson

<http://arxiv.org/abs/1209.5277>

$\mathbb{R}$ -extension of Dunkl operator in one variable and Bessel functions of vector index

Ahmed Fitouhi, Lazhar Dhaouadi

<http://arxiv.org/abs/1209.5378>

Exponential generating functions for the associated Bessel functions

H. Fakhri, B. Mojaveri, M. A. Gomshi Nobary

<http://arxiv.org/abs/1209.6133>

Riesz Potentials, Bessel Potentials and Fractional Derivatives on Triebel-Lizorkin spaces for the Gaussian Measure

Eduardo Gatto, Ebner Pineda, Wilfredo Urbina

<http://arxiv.org/abs/1210.2081>

About some identities for Bessel polynomials

Olivier Lévêque, Christophe Vignat

<http://arxiv.org/abs/1210.2109>

Infinite series representations for Bessel functions of the first kind of integer order

Andriy Andrusyk

<http://arxiv.org/abs/1209.1192>

Fractional order differentiation by integration with Jacobi polynomials

Da-Yan Liu (KAUST-CEMSE), Olivier Gibaru (INRIA Lille - Nord Europe, LSIS), Wilfrid Perruquetti (INRIA Lille - Nord Europe, LAGIS), Taous-Meriem Laleg-Kirati (KAUST-CEMSE)

<http://arxiv.org/abs/1209.3675>

Entropic fluctuations in XY chains and reflectionless Jacobi matrices

V. Jaksic, B. Landon, C.-A. Pillet

<http://arxiv.org/abs/1209.6047>

Fourier, Gegenbauer and Jacobi expansions for a power-law fundamental solution of the polyharmonic equation and polyspherical addition theorems

Howard S. Cohl

<http://arxiv.org/abs/1210.0039>

Generalization and simplifications of generating functions for Jacobi, Gegenbauer, Chebyshev and Legendre polynomials with definite integrals

Howard Cohl, Connor MacKenzie

<http://arxiv.org/abs/1210.0119>

Infinite families of (quasi)-Hermitian Hamiltonians associated with exceptional X_m Jacobi polynomials

Bikashkali Midya, Barnana Roy

<http://arxiv.org/abs/1210.1292>

Asymptotics of the Eigenvalues of Two-Diagonal Jacobi Matrices

Rostyslav Kozhan

<http://arxiv.org/abs/1210.1342>

Harmonic analysis operators related to symmetrized Jacobi expansions

Bartosz Langowski

<http://arxiv.org/abs/1210.3084>

On Optimal Separation of Eigenvalues for a Quasiperiodic Jacobi Matrix

Iliia Binder, Mircea Voda

<http://arxiv.org/abs/1210.4627>

Meromorphic continuations of finite gap Herglotz functions and periodic Jacobi matrices

Rostyslav Kozhan

<http://arxiv.org/abs/1209.3843>

Linear relations of zeroes of the zeta-function

Darcy Best, Tim Trudgian

<http://arxiv.org/abs/1209.4329>

On quotients of Riemann zeta values at odd and even integer arguments

Bernd C. Kellner

<http://arxiv.org/abs/1210.1942>

Identities for the Ramanujan zeta function

Mathew Rogers

<http://arxiv.org/abs/1210.5157>

Elegant expressions and generic formulas for the Riemann zeta function for integer arguments

Michael A. Idowu

<http://arxiv.org/abs/1210.5559>

Fundamental relations between the Dirichlet beta function, euler numbers, and Riemann zeta function for positive integers

Michael A. Idowu

<http://arxiv.org/abs/1210.5652>

Integral Transforms of the Harmonic Sawtooth Map, The Riemann Zeta Function, Fractal Strings, and a Finite Reflection Formula

Stephen Crowley

<http://arxiv.org/abs/1210.7357>

A Finite Reflection Formula For A Polynomial Approximation To The Riemann Zeta Function

Stephen Crowley

<http://arxiv.org/abs/1209.1562>

On the algebraic independence of generic Painleve transcendents
Joel Nagloo, Anand Pillay

<http://arxiv.org/abs/1209.3836>

Degeneration scheme of 4-dimensional Painlevé-type equations
Hiroshi Kawakami, Akane Nakamura, Hidetaka Sakai

<http://arxiv.org/abs/1209.3959>

4-dimensional Frobenius manifolds and Painleve' VI
Stefano Romano

<http://arxiv.org/abs/1209.5415>

Asymptotics of a Fredholm determinant involving the second Painlevé transcendent
Thomas Bothner, Alexander Its

<http://arxiv.org/abs/1210.0311>

A Review on The Sixth Painleve' Equation
Davide Guzzetti

<http://arxiv.org/abs/1210.0915>

Quantizing the discrete Painlevé VI equation : The Lax formalism
Koji Hasegawa

<http://arxiv.org/abs/1210.3381>

Painleve II in random matrix theory and related fields
Peter J. Forrester, Nicholas S. Witte

<http://arxiv.org/abs/1210.6822>

Properties of the series solution for Painleve I
A. N. W. Hone, O. Ragnisco, F. Zullo

Topic #8 ----- OP-SF NET 19.6 ----- November 15, 2012

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 130 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 (dominiced@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/>

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 . The moderators are Bonita Saunders (bonita.saunders@nist.gov) and Diego Dominici (dominiced@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:

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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 #9 ----- OP-SF NET 19.6 ----- November 15, 2012

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 dominiced@newpaltz.edu or muldoon@yorku.ca .

Contributions to OP-SF NET 20.1 should be sent by January 1, 2013.

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: Jeff 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