

# OP – SF NET – Volume 14, Number 4 – July 15, 2007

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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:

2007

July 23-27: Twelfth International Conference on Difference Equations and Applications (ICDEA07), The Technical University of Lisbon, Portugal

<http://www.math.ist.utl.pt/icdea2007/>

September 2-8: 28th Conference on Quantum Probability and Related Topics, Guanajuato, Mexico.

<http://www.cimat.mx/Eventos/28quantum/>

14.2 #4

September 9-14: Applications of Macdonald Polynomials, Banff International Research Station, Banff, Alberta, Canada

[www.pims.math.ca/birs/birspages.php?task=displayevent&event\\_id=07w5048](http://www.pims.math.ca/birs/birspages.php?task=displayevent&event_id=07w5048)

13.5 #1

September 16-20: International Conference of Numerical Analysis and Applied Mathematics 2007, (ICNAAM 2007) Corfu, Greece  
<http://www.icnaam.org/>

September 17-19: Interdisciplinary conference "SPECIAL FUNCTIONS, INFORMATION THEORY AND MATHEMATICAL PHYSICS", in honor of Jesús S. Dehesa's 60th birthday, Granada, Spain 14.2 #3 14.4 #1  
<http://www.ugr.es/~jsd60th>

December 12-15: Joint Meeting of the American Mathematical Society and the New Zealand Mathematical Society including Special Session on Special Functions and Orthogonal Polynomials 14.2 #5  
<http://www.mcs.vuw.ac.nz/%7Emathmeet/amsnzms2007/index.shtml>

2008

January 6-9: Joint Mathematics Meetings including the AMS-SIAM Special Session on Asymptotic Methods in Analysis with Applications, San Diego, California  
[http://www.ams.org/amsmtgs/2109\\_program\\_ss18.html#title](http://www.ams.org/amsmtgs/2109_program_ss18.html#title)

January 14 - July 4: Program: Combinatorics and Statistical Mechanics, Isaac Newton Institute for Mathematical Sciences, Cambridge, United Kingdom  
<http://www.newton.cam.ac.uk/programmes/CSM/>

March 2-7: Ninth International Conference "Approximation and Optimization in the Caribbean" (APPOPT'2008)" San Andres Island, Colombia.  
<http://matematicas.univalle.edu.co/~appopt2008/?seccion=anuncio&idioma=EN>

May 15-17: Twelfth International Conference Devoted to the Memory of Academician Mykhailo Kravchuk (Krawtchouk) (1892-1942), Kyiv, Ukraine. Information: Ukraine, 03056, Kyiv-56, Peremohy Ave. 37, National Technical University of Ukraine (KPI), Phys.-Math. Departments, Corpus 7, Room 437, M. Kravchuk Conference, N. Virchenko; tel. (380) 44 454-97-40; e-mail: [kravchukconf@yandex.ru](mailto:kravchukconf@yandex.ru)

**Topic #1 ----- OP-SF NET 14.4 ----- July 15, 2007**

From: Tom Koornwinder, [thk@science.uva.nl](mailto:thk@science.uva.nl)

Subject: Report on OPSFA 2007, Marseille

Report on the 9th Conference on Orthogonal Polynomials, Special Functions and Applications (OPSFA9), Luminy, Marseille, France, 2-6 July 2007

The ninth OPSFA was held during the first week of July 2007 in the nice International Center for Mathematical Meetings (CIRM) of the French Mathematical Society in Luminy, far out to the southeast from the centre of Marseille, at the boundary of the large park of the Calanques (geologic formations in the form of deep valleys with steep sides, typically of limestone, partly submerged in the Mediterranean).

Where and when have the previous OPSFA meetings been held? Curiously enough, there is no permanent OPSFA website giving this information, and neither is there an official OPSFA board, which continues in office after an OPSFA meeting. Still, the attractiveness of the field and the closeness of informal contacts have been strong enough to maintain a tradition of OPSFA meetings for 23 years.

Fortunately the OPSFA9 website lists all past OPSFA conferences, but there is immediate confusion, since 11 meetings have preceded Marseille. However, the Granada and Sevilla meetings fit into a special Spanish sequence of SPOA meetings (see OP-SF NET 3.5 #5 for a list), and the Stieltjes meeting in Delft had a much wider scope. So we have the following list.

- OPSFA1 Bar-le-Duc (France, 1984, opened by Jean Dieudonné)
- OPSFA2 Segovia (Spain, 1986)
- OPSFA3 Erice (Italy, 1990)
- VII SPOA Granada (Spain, 1991)
- OPSFA4 Evian (France, 1992)
- Stieltjes Delft (Netherlands, 1994, in honour of Thomas Jan Stieltjes, 1856- 1894)
- VIII SPOA Sevilla (Spain, 1997)
- OPSFA5 Patras (Greece, 1999, in honour of Theodore Chihara)
- OPSFA6 Rome-Ostia (Italy, 2001)
- OPSFA7 Copenhagen (Denmark, 2003, in honour of Richard Askey)
- OPSFA8 München (Germany, 2005)
- OPSFA9 Marseille-Luminy (France, 2007)

Some obvious questions arise. How many of the participants in Marseille attended all twelve listed meetings, or all nine OPSFA meetings? Probably nobody. How many of the participants were also in Bar-le-Duc in 1984? I would guess at least ten.

Of course, each of these conferences emphasized certain themes, closely related to the choice of invited speakers. It was only while writing this report that I found a web document describing these themes for OPSFA9 much more clearly than in the announcements distributed before the conference; see for instance OP-SF NET 13.6 #1. This web document mentions as the foremost theme "Orthogonal polynomials on the unit circle (OPUC) and spectral theory of Schrödinger operators", writing: "Barry Simon has published in 2005 a full treatise in two volumes on OPUC (AMS Colloquium Publications, 54), in the same series where Szegő published his pioneering book on OP in 1939. This is a kind of a bible on the subject, including the important recent results by Killip and Denissov. These OPUC are the best tool for studying discretizations of Schrödinger equation and have led to very unusual results on the spectrum: Denissov has shown that there exist Schrödinger operators, with square integrable potentials, which exhibit absolutely continuous and singular spectrum on the same spectral interval. It exhibits also the major theorems in the field (Szegő, Rahmanov, Geronimus, Baxter, ...) including modern proofs and tying OPUC theory with spectral theory. This leads to deep results for periodic or exponentially decaying Verblunsky coefficients. This book induces a strong revival in the field and will be well represented at the Conference, since Denissov, Killip and Simon will be lecturing."

And indeed, this was really Barry Simon's conference. Not only did he give a plenary lecture on "Fuchsian groups and the spectral theory of finite gap Jacobi matrices or Peherstorfer-Sodin-Yuditskii meet Killip-Simon", but on earlier days he had already given two evening lectures on two "earthquakes":

- Lubinsky earthquake: A revolution in universality and OP zeros (papers 199, 206 on <http://www.math.gatech.edu/~lubinsky/SelectedPapers.html> )
- Remling earthquake: A revolution in AC spectrum (<http://arxiv.org/abs/0706.1101> )

It was a good idea to have also some younger plenary lecturers such as Denissov and Killip, mentioned above. They both gave very good lectures, on continuous analogs of OP's on the unit circle, and on random OP's and random matrices, respectively.

A further broad area of mutually interacting themes concerned the keywords Hermite-Padé approximants, rational approximation and interpolation, Riemann-Hilbert problems, varying weights, multiple orthogonal polynomials, connections with random matrix theory, and numerical aspects (plenary speakers Aptekarev, Beckermann, Kuijlaars, Magnus, Stahl and Van Assche).

The French school on Fuchsian differential equations and differential Galois theory, and their  $q$ -analogues, was suitably represented by Ramis.

Functional analytic aspects were covered by Lasser and Golinskii. Approximation theory in  $n$ -dimensional setting was presented by Plesniak. Grunbaum talked on matrix orthogonal polynomials, Martínez-Finkelshtein lectured on information measures of OP's, while more classical aspects of orthogonal polynomials could be heard in the lectures by Berg, Ismail and Marcellán.

Anny Cuyt reported in her lecture on the "Handbook of continued fractions for special functions", which will come out soon, both in book form and online; see already <http://www.cfhlive.ua.ac.be/>

Mourad Ismail made a short announcement of the Askey-Bateman project, a multi-volume series of books which will be a successor to "Higher Transcendental Functions" (the Bateman Project). In an evening session he gave interested persons a further briefing on this project. This was followed by a meeting of the SIAM Activity Group on OPSF, where present chair Peter Clarkson heard many good suggestions, about which he will probably report in OP-SF NET.

On Friday afternoon Mourad headed a problem session, and Dick Askey lectured on problems from special functions suitable for high school teachers, in particular easy forms of addition formulas. These two events were additional to the official conference program.

Then there were the contributed lectures, always five in parallel, so that you were sure to miss some that you would like to have heard. But from those that I could attend, and from what I read in the abstracts, I can say that there was a lot of good stuff.

Social activities included an aperitif before lunch on Tuesday, and an excursion to the nearby charming seaside village of Cassis, from which we made a boat trip to the calanques, and which was followed by a conference dinner in a very pleasantly located restaurant.

The organizers Galliano Valent, Jacek Gilewicz and Roland Triay, supported by an international scientific committee, really did a great job in making this conference into an important scientific event. The excellent facilities of CIRM (meals, lodging, library, computers, wireless network, lecture rooms) were very helpful in making this week a success.

Of course, nothing is perfect, so let me list a few things which may have annoyed some people and from which the organizers of the next OPSFA (maybe in Leuven, Belgium) can learn.

There were about 150 participants, which is more than can be accommodated by CIRM. The less privileged participants had to stay in student dormitories on the nearby campus, and take their meals in student cafeterias. Another consequence of this large number was

that the plenary lectures on the first day were held in a large lecture room on campus with inferior projectors. Fortunately, on the succeeding days we fitted without problems into the smaller, very nice CIRM auditorium. One draw-back of the CIRM auditorium was the difficult control of the beamer. Technical assistance was not always available.

A somewhat confusing feature was the absence of a central registration area at the beginning of the conference. Instead, during the first days of the conference, one had to visit two different places in the building (a window and a desk) to pay or receive money.

With the emphasis on some scientific themes, of course some others will receive less coverage. I missed several variables, and connections with root systems, groups and quantum groups.

Some of the plenary computer presentations were really excellent, for instance those by Kuijlaars and by Martínez-Finkelshtein. But taking notes is more difficult with this medium. I have attended other conferences where the sheets of the lectures were put on the conference website. I want to recommend this also to OPSFA.

The conference book is on the web, see

[http://www.cirm.univ-mrs.fr/liste\\_rencontre/programmes/ProgValent0727juin.pdf](http://www.cirm.univ-mrs.fr/liste_rencontre/programmes/ProgValent0727juin.pdf)

Finally I suggest that the reader visit <http://www.morewords.com/word/opsfa/>

**Topic #2                      OP-SF NET 14.4                      July 15, 2007**

From: Congress in honor of Prof. J.S. Dehesa [jsd60th@ugr.es](mailto:jsd60th@ugr.es)

Subject: Congress in honor of Prof. J.S. Dehesa: Third circular

Dear Colleagues and friends,

This is to inform you about the availability of the poster announcing the interdisciplinary conference in honor of Jesús S. Dehesa's 60th birthday: "Special Functions, Information Theory and Mathematical Physics". The conference will be held in Granada (Spain), on September 17-19, 2007.

This poster (in a3 and a4 sizes) can be downloaded from

<http://www.ugr.es/~jsd60th/poster.htm> .

Please help us to spread this information by putting up this poster in your department's bulletin board and any other place that you might find of interest.

We take advantage of this opportunity to remind you that early registration dead line is July 13, 2007 and also that all information about the conference can be found at our web site: <http://www.ugr.es/~jsd60th>

Of course, do not hesitate to contact us at: [jsd60th@ugr.es](mailto:jsd60th@ugr.es) .

Looking forward to seeing you in Granada,

The Organizing Committee

**Topic #3      -----      OP-SF NET 14.4      -----      July 15, 2007**

From: Tom Koornwinder [thk@science.uva.nl](mailto:thk@science.uva.nl)  
Subject: 2007 SASTRA Ramanujan prize: call for nominations

2007 SASTRA Ramanujan prize: call for nominations (deadline August 15, 2007).  
See <http://www.math.ufl.edu/sastra-prize/nominations-2007.html>

This prize is given annually to a mathematician not exceeding the age of 32 for outstanding contributions in an area of mathematics influenced by Srinivasa Ramanujan.

**Topic #4      -----      OP-SF NET 14.4      -----      July 15, 2007**

From: OP-SF NET Editors  
Subject: Nevai review of Simon book on OPUC

There is a long review by Paul Nevai of Barry Simon's *Orthogonal Polynomials on the Unit Circle* (American Mathematical Society, 2005) in *Bulletin of the American Society*, vol 44, no. 3, July 2007, pages 447-470. Here you can learn much about the book and other matters.

OP-SF NET does not seem to have noted the appearance of the Simon book.

The basic information is at  
<http://www.ams.org/bookstore-getitem/item=COLL-54>

from which the following extract is taken.

Orthogonal Polynomials on the Unit Circle:  
Part 1: Classical Theory; Part 2: Spectral Theory  
Barry Simon, California Institute of Technology

### **Colloquium Publications**

2004; 1044 pp; hardcover

Volume: 54

ISBN-10: 0-8218-3757-5

ISBN-13: 978-0-8218-3757-3

List Price: US\$149

Member Price: US\$119

This two-part volume gives a comprehensive overview of the theory of probability measures on the unit circle, viewed especially in terms of the orthogonal polynomials defined by those measures. A major theme involves the connections between the Verblunsky coefficients (the coefficients of the recurrence equation for the orthogonal polynomials) and the measures, an analog of the spectral theory of one-dimensional Schrödinger operators.

Among the topics discussed along the way are the asymptotics of Toeplitz determinants (Szegő's theorems), limit theorems for the density of the zeros of orthogonal polynomials, matrix representations for multiplication by  $z$  (CMV matrices), periodic Verblunsky coefficients from the point of view of meromorphic functions on hyperelliptic surfaces, and connections between the theories of orthogonal polynomials on the unit circle and on the real line.

The book is suitable for graduate students and researchers interested in analysis.

### Table of Contents

- **Part 1: The Basics**
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- Tools for Geronimus' theorem
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- The connection to Jacobi matrices
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**Topic #5**      -----      **OP-SF NET 14.4**      -----      **July 15, 2007**

From: OP-SF NET Editors  
Subject: Preprints in arXiv.org

The following preprints related to the fields of orthogonal polynomials and special functions were posted or cross-listed to one of the subcategories of arXiv.org during May and June 2007.

<http://www.arxiv.org/abs/0705.0175>

The integrals in Gradshteyn and Ryzhik. Part 3: Combinations of Logarithms and Exponentials

Authors: Victor H. Moll

Comments: 5 pages

Subjects: Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0705.0179>

Title: The integrals in Gradshteyn and Ryzhik. Part 4: The Gamma function

Authors: Victor H. Moll

Comments: 9 pages

Subjects: Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0705.0318>

Title: Decomposition of spaces of distributions induced by Hermite expansions

Authors: Pencho Petrushev, Yuan Xu

Comments: 34 pages

Subjects: Classical Analysis and ODEs (math.CA); Functional Analysis (math.FA)

<http://www.arxiv.org/abs/0705.0698>

Signed  $q$ -Analogues of Tornheim's Double Series

Authors: Xia Zhou, Tianxin Cai (Zhejiang University), David M. Bradley

Comments: 12 pages, AMSLaTeX, to appear in Proceedings of the American Mathematical Society

Subjects: Number Theory (math.NT); Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0705.0732>

Integrals Over Polytopes, Multiple Zeta Values and Polylogarithms, and Euler's Constant

Authors: Jonathan Sondow (New York), Sergey Zlobin (Moscow)

Comments: 18 pages, to appear in Mat Zametki

Subjects: Number Theory (math.NT); Complex Variables (math.CV)

<http://www.arxiv.org/abs/0705.0768>

A succinct method for investigating the sums of infinite series through differential formulae

Authors: Leonhard Euler

Comments: 8 pages

Subjects: History and Overview (math.HO); Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0705.1329>

Third Order Newton's Method for Zernike Polynomial Zeros

Authors: Richard J. Mathar

Comments: Improved eqs (1),(3) and (48). More references. Expanded Table in Appendix

Subjects: Numerical Analysis (math.NA)

<http://www.arxiv.org/abs/0705.1469>

Bispectrality of multivariable Racah-Wilson polynomials

Authors: Jeffrey S. Geronimo, Plamen Iliev

Comments: 34 pages

Subjects: Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0705.1812>

The Cauchy Operator for Basic Hypergeometric Series

Authors: Vincent Y. B. Chen, Nancy S. S. Gu

Comments: 21 pages

Subjects: Combinatorics (math.CO)

<http://www.arxiv.org/abs/0705.1854>

On the Riemann zeta-function, Part I: Outline

Authors: Anthony Csizmazia

Comments: 47 pages. PDF. Corrected a few typos

Subjects: General Mathematics (math.GM)

<http://www.arxiv.org/abs/0705.2188>

Multiresolution wavelet analysis of integer scale Bessel functions

Authors: Sergio Albeverio, Palle E.T. Jorgensen, Anna M. Paolucci

Comments: Research paper, 32 pages

Subjects: Representation Theory (math.RT); Operator Algebras (math.OA)

<http://www.arxiv.org/abs/0705.2379>

The integrals in Gradshteyn and Ryzhik. Part 5: Some trigonometric integrals

Authors: Tewodros Amdeberhan, Luis Medina, Victor H. Moll

Comments: 13 pages

Subjects: Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0705.2477>

Cesàro means of orthogonal expansions in several variables

Authors: Feng Dai, Yuan Xu

Subjects: Classical Analysis and ODEs (math.CA); General Mathematics (math.GM)

<http://www.arxiv.org/abs/0705.2467>

Vector-valued modular functions for the modular group and the hypergeometric equation

Authors: P. Bantay, T. Gannon

Comments: 20 pages, latex

Subjects: Number Theory (math.NT); High Energy Physics - Theory (hep-th)

<http://www.arxiv.org/abs/0705.2547>

Title: Some remarks on spherical harmonics

Authors: V.M. Gichev

Comments: 16 pages

Subjects: Classical Analysis and ODEs (math.CA); Metric Geometry (math.MG)

<http://www.arxiv.org/abs/0705.2699>

On the Riemann zeta-function, Part II

Authors: Anthony Csizmazia

Comments: 43 pages. PDF file

Subjects: General Mathematics (math.GM)

<http://www.arxiv.org/abs/0705.2802>

On Asymptotics of  $q$ -Gamma Functions

Authors: Ruiming Zhang

Comments: 10 pages

<http://www.arxiv.org/abs/0705.2825>

Laguerre polynomials and the inverse Laplace transform using discrete data

Authors: Tran Ngoc Lien, Dang Duc Trong (UNS-HCMC), Alain Pham Ngoc Dinh (MAPMO)

Comments: 14 pages

Subjects: Analysis of PDEs (math.AP)

<http://www.arxiv.org/abs/0705.2886>

New Integral Representations of Whittaker Functions for Classical Lie Groups

Authors: A. Gerasimov, D. Lebedev, S. Oblezin

Comments: 100 pages

Subjects: Representation Theory (math.RT)

<http://www.arxiv.org/abs/0705.2963>

Computation of RS-pullback transformations for algebraic Painleve VI solutions

Authors: Raimundas Vidunas, Alexander Kitaev

Comments: 34 pages; The appendix figure added

Subjects: Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0705.2995>

On the Riemann zeta-function, Part III

Authors: Anthony Csizmazia

Comments: 23 pages

Subjects: General Mathematics (math.GM)

<http://www.arxiv.org/abs/0705.3137>

Studies on the Painlevé VI system

Authors: Yusuke Sasano

Comments: 3 pages, 3 figures

Subjects: Algebraic Geometry (math.AG)

<http://www.arxiv.org/abs/0705.3358>

Integral representation of solutions to Fuchsian system and Heun's equation

Authors: Kouichi Takemura

Comments: 21 pages

Subjects: Classical Analysis and ODEs (math.CA); Mathematical Physics (math-ph); Exactly Solvable and Integrable Systems (nlin.SI)

<http://www.arxiv.org/abs/0705.1984>

Reconstruction from Radon projections and orthogonal expansion on a ball

Authors: Yuan Xu

Comments: 15 pages

Subjects: Mathematical Physics (math-ph)

<http://www.arxiv.org/abs/0705.3148>

Spherical harmonics and integration in superspace

Authors: Hendrik De Bie, Frank Sommen

Comments: 22 pages, accepted for publication in J. Phys. A

Subjects: High Energy Physics - Theory (hep-th); Mathematical Physics (math-ph)

<http://www.arxiv.org/abs/0705.3581>

The bends on a quantum waveguide and cross-products of Bessel functions

Authors: Martin Horvat, Tomaz Prosen

Comments: 34 pages, 21 figures

Subjects: Quantum Physics (quant-ph); Mathematical Physics (math-ph)

<http://www.arxiv.org/abs/0706.0356>

A class of series acceleration formulae for Catalan's constant

Authors: David M. Bradley

Comments: 13 pages, AMSLaTeX

Journal-ref: Ramanujan Journal Vol. 3 (1999), no. 2, pp. 159--173. [MR 1703281] (2000f:11163)

Subjects: Classical Analysis and ODEs (math.CA); Number Theory (math.NT)

<http://www.arxiv.org/abs/0706.0551>

A generating function for non-standard orthogonal polynomials involving differences: the Meixner case

Authors: Juan J. Moreno-Balcazar, Teresa E. Perez, Miguel A. Pinar

Comments: 14 pages

Subjects: Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0706.0722>

An ansatz for the singularities of hypergeometric multisums

Authors: Stavros Garoufalidis

Comments: 17 pages and 1 figure

Subjects: Combinatorics (math.CO); Algebraic Geometry (math.AG)

<http://www.arxiv.org/abs/0706.1065>

Tridiagonal pairs of Krawtchouk type

Authors: Tatsuro Ito, Paul Terwilliger

Comments: 20 pages

Subjects: Rings and Algebras (math.RA); Representation Theory (math.RT)

<http://arxiv.org/abs/0706.1101>

The absolutely continuous spectrum of Jacobi matrices

Authors: Christian Remling

Subjects: Spectral Theory (math.SP); Mathematical Physics (math-ph)

<http://www.arxiv.org/abs/0706.1773>

The Stokes phenomenon in the confluence of the hypergeometric equation using Riccati equation

Authors: Caroline Lambert (Université de Montréal), Christiane Rousseau (Université de Montréal)

Comments: 22 pages

<http://www.arxiv.org/abs/0706.1806>

On the asymptotic behavior of Faber polynomials for domains with piecewise analytic boundary

Authors: Erwin Miña-Díaz

Comments: 39 pages, 4 figures

Subjects: Classical Analysis and ODEs (math.CA); Complex Variables (math.CV)

<http://www.arxiv.org/abs/0706.3003>

Connections between real polynomial solutions of hypergeometric-type differential equations with Rodrigues formula

Authors: H. J. Weber (University of Virginia)

Comments: 13 pages, no figures

Journal-ref: Central European J. Math. 5 (2007) 415-427

Subjects: Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0706.3029>

Using integral transforms to estimate higher order derivatives

Authors: David M. Bradley

Comments: 10 pages AMSLaTeX, 1 table, 1 figure

Journal-ref: The American Mathematical Monthly, Vol. 107, No. 10, December 2000, pp. 923--931. [MR 1807002] (2001m:26002)

Subjects: Numerical Analysis (math.NA); History and Overview (math.HO)

<http://www.arxiv.org/abs/0706.3153>

Connections between Romanovski and other polynomials

Authors: H. J. Weber

Comments: 17 pages, no figures, to appear in Central European J. Math. (2007)

Subjects: Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0706.3003>

Connections between real polynomial solutions of hypergeometric-type differential equations with Rodrigues formula

Authors: H. J. Weber (University of Virginia)

Comments: 13 pages, no figures

Journal-ref: Central European J. Math. 5 (2007) 415-427

Subjects: Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0706.3192>

Hankel determinant and orthogonal polynomials for the Gaussian weight with a jump

Authors: A. Its, I. Krasovsky

Comments: 41 pages, 7 figures

Subjects: Functional Analysis (math.FA); Mathematical Physics (math-ph)

<http://www.arxiv.org/abs/0706.3555>

A formula for the hypergeometric function of type  ${}_{BC_n}$

Authors: Nobukazu shimeno

Subjects: Representation Theory (math.RT); Quantum Algebra (math.QA)

<http://www.arxiv.org/abs/0706.3619>

Almost Everywhere Convergence of Inverse Dunkl Transform on the Real Line

Authors: Jamel El Kamel, Chokri Yacoub

Comments: 9 pages

Subjects: Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0706.3627>

Title: Familles fuchsienues d'equations aux (q-)différences et confluence

Authors: Anne Duval (LPP), Julien Roques (LEP)

Subjects: Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0706.4054>

Title: A proof of the pentagon relation for the quantum dilogarithm

Authors: A.B. Goncharov

Comments: 7 pages. To appear in the Progress in Mathematics volume (Birkhauser) dedicated to the memory of Alexander Reznikov

Subjects: Quantum Algebra (math.QA); Functional Analysis (math.FA)

<http://www.arxiv.org/abs/0706.4238>

Title: Immediate Calculation of some Poisson Type Integrals Using Supermathematics Circular Ex-Centric Functions

Authors: Florentin Smarandache, Mircea Eugen Selariu

Comments: 10 pages, 3 figures

Subjects: General Mathematics (math.GM)

<http://www.arxiv.org/abs/0706.4341>

Title: A note on p-adic q-integrals associated with q-Euler numbers

Authors: Taekyun Kim

Comments: 5 pages

Subjects: Number Theory (math.NT)

<http://www.arxiv.org/abs/0706.0345> (cross-list from math-ph)

Title: Series of zeta values, the Stieltjes constants, and a sum  $S_{\gamma}(n)$

Authors: Mark W. Coffey

Comments: 25 pages, no figures

Subjects: Mathematical Physics (math-ph)

<http://www.arxiv.org/abs/0706.0767> (cross-list from math-ph)

Title: Skew-orthogonal polynomials: the quartic case

Authors: Saugata Ghosh

Comments: 6 pages

Subjects: Mathematical Physics (math-ph)

<http://www.arxiv.org/abs/0706.1409> (cross-list from cs.SC)

Title: A Proof of a Recursion for Bessel Moments

Authors: Jonathan M. Borwein, Bruno Salvy (INRIA Rocquencourt)

Subjects: Symbolic Computation (cs.SC); Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0706.3387> (cross-list from nlin.SI)

Title: Vadim Kuznetsov. Informal Biography by Eyes of His First Adviser

Authors: Igor Komarov

Comments: This is a contribution to the Vadim Kuznetsov Memorial Issue on Integrable Systems and Related Topics, published in SIGMA (Symmetry, Integrability and Geometry: Methods and Applications) at [this http URL](#)

Journal-ref: SIGMA 3 (2007), 074, 6 pages

Subjects: Exactly Solvable and Integrable Systems (nlin.SI); Mathematical Physics (math-ph); Classical Analysis and ODEs (math.CA)

<http://www.arxiv.org/abs/0706.3986> (cross-list from math-ph)

Title: Positivity of Some Integral Transforms, and Generalization of Bochner's Theorem on Functions of Positive Type

Authors: Khosrow Chadan

Subjects: Mathematical Physics (math-ph)

**Topic #6** ----- **OP-SF NET 14.4** ----- **July 15, 2007**

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](mailto: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](mailto:dominicd@newpaltz.edu)) and Martin Muldoon ([muldoon@yorku.ca](mailto:muldoon@yorku.ca)).

To receive the OP-SF NET, send your name and email address to [poly-request@siam.org](mailto: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/emaillist/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](mailto: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](mailto:listproc@nist.gov). To contribute an item to the discussion, send email to [opsftalk@nist.gov](mailto:opsftalk@nist.gov). The archive of all messages is accessible at:

<http://math.nist.gov/opsftalk/archive>

**Topic #7      -----      OP-SF NET 14.4      -----      July 15, 2007**

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](mailto:poly@siam.org) with a copy 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 14.5 should be sent by September 1, 2007.

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.

Send submissions 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)

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://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](mailto:service@siam.org)

The elected Officers of the Activity Group (2005-2007) are:

Peter A. Clarkson, Chair

Daniel W. Lozier, Vice Chair

Javier Segura, 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