O P - S F N E T – Volume 14, Number 5 – September 15, 2007

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Calendar of Events:
2007

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

September 17-21, 2007**:** Summer School on "New Trends and Directions in Harmonic Analysis, Approximation Theory, and Image Analysis" – Inzell, Germany

October 15-19, 2007**:** Diagonally symmetric polynomials and applications – CIEM, Castro-Urdiales, Spain

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 14.5 #3
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

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

June 16–26 2008: Foundations of Computational Mathematics, City University of Hong Kong at Hong Kong, China

WORKSHOP A6
Special functions and orthogonal polynomials
ORGANISERS: **Peter Clarkson, Guillermo Lopez, Mourad Ismail** & **Ed Saff**

WORKSHOP B1

    Asymptotic analysis

    ORGANISERS: **Arno Kuijlaars** & **Roderick Wong**

June 22-28, 2008**:** Combinatorics 2008 – Costermano, Verona, Italy.

Topic #1   -----------   OP-SF NET 14.5   -----------   September 15, 2007

From: Peter Clarkson P.A.Clarkson@kent.ac.uk
Subject: Message from the Chair

Welcome to the latest issue of OP-SF Net. I am pleased to inform you that the application for the renewal of the charter for our SIAG has been approved by SIAM Council which met in Zurich, Switzerland in July. In the application (which can be downloaded from
http://www.kent.ac.uk/IMS/personal/pac3/Papers/SIAG_OPSFrenewal.pdf),
the fact that currently there appears to be no SIAM journal which is appropriate for our SIAG members to submit to was raised, an issue that I mentioned in this newsletter earlier this year. I have also discussed this issue with Cleve Moler (SIAM President), Jim Crowley (SIAM Executive Director) and some members of SIAM Council during the ICIAM meeting in Zurich, Switzerland this July. The issue, there are other small groups within SIAM with related issues, has now been taken up by the SIAM board and council so we hope for some progress later this year. I thank the members of OPSF who have contacted me about the matter.

Topic #2   -----------   OP-SF NET 14.5   -----------   September 15, 2007

From: Peter Clarkson P.A.Clarkson@kent.ac.uk
Subject: Report on SIAG/OPSF Business meeting

There was a business meeting of SIAG/OPSF on July 5th, 2007 during the OPSFA meeting held at the CIRM, Luminy, France, chaired by Peter Clarkson (Chair of SIAG/OPSF).

1. The chair informed the meeting of the current membership details as supplied by Susan Whitehouse (Membership Manager, SIAM). During the subsequent discussion it was noted that many researchers in the field live outside the USA, in particular in Europe. Further, it was noted that SIAM has only a very small number of reciprocal agreements compared with, say, the American Mathematical Society.

2. The chair informed the meeting about (a), the election of officers for the SIAG which is to take place later this year, and (b), the charter renewal for the SIAG.

3. There was a discussion about OP-SF Net. It was noted that this was extremely useful in the circulation of information. Suggestions were made as to how the newsletter could be improved. Diego Dominici and Martin Muldoon were thanked for their work on the newsletter.

4. There was a discussion on future SIAG/OPSF activities. Suggestions included having a OPSF meeting in the USA and a Summer School (the last one being in Leganes, Madrid, Spain, 2004).

5. There was a discussion about SIAM journals. It was noted that currently no member of the SIAG/OPSF is a member of the Editorial Board of a SIAM journal and the editorial direction of the SIAM Journal on Mathematical Analysis had changed over the past few years so that now there appears to be no SIAM journal which is appropriate for SIAG/OPSF members to submit to. There was also a discussion about the feasibility of starting up an electronic journal in Orthogonal Polynomials and Special Functions.

Topic #3   -----------   OP-SF NET 14.5   -----------   September 15, 2007

From: OP-SF NET Editors
Subject: First Joint International Meeting between the AMS and the New Zealand Mathematical Society (NZMS)

During the first Joint International Meeting between the AMS and the New Zealand Mathematical Society (NZMS) to be held in Wellington, New Zealand. December 12-15, 2007, there will be a Special session on Special Functions and Orthogonal Polynomials organised by Diego Dominici, Ole Warnaar and Shaun Cooper.

Keynote addresses:

- o Mourad Ismail (University of Central Florida, USA)
- o Ernie Kalnins (University of Waikato, NZ)
- o Dennis Stanton (University of Minnesota Minneapolis, USA)

Walter Van Assche (Katholieke Universiteit Leuven, Belgium)

Confirmed/probable speakers:

- o Richard Askey (University of Wisconsin-Madison, USA)
- o Bruce Berndt (University of Illinois at Urbana-Champaign, USA)
- o Kevin Broughan (University of Waikato, NZ)
- o Song Heng Chan (Nanyang Technological University, Singapore)
- o Edmund Y. M. Chiang (Hong Kong University of Science & Technology)
- o Wenchang Chu (Università degli Studi di Lecce, Italy)
- o Michael Hirschhorn (University of New South Wales, Australia)
- o Stamatis Koumandos (University of Cyprus)
- o Andrea Laforgia (Università di Roma Tre, Italy)
- o Heung Yeung Lam (Massey University, NZ)
- o Michael Schlosser (Universität Wien, Austria)
- o Slava Spiridonov (Joint Institute of Nuclear Research, Dubna, Russia)
- o Paul Terwilliger (University of Wisconsin-Madison, USA)
- o Pee Choon Toh (National University of Singapore)
- o Shayne Waldron (University of Auckland, NZ)
- o Norman Wildberger (University of New South Wales, Australia)
- o Nicholas Witte (University of Melbourne, Australia)

 For further information on the meeting, see
 http://www.mcs.vuw.ac.nz/%7Emathmeet/amsnzms2007/index.shtml

Topic #4   -----------   OP-SF NET 14.5   -----------   September 15, 2007

From: OP-SF NET Editors
Subject: Report on Marseilles meeting

In the July issue we brought you a report by Tom Koornwinder on the OPSFA meeting in Marseilles. Here is an additional report by Tim Huber, a recent PhD; more information on Tim is available at his web site:
http://www.math.uiuc.edu/~tjhuber/

The 2007 OPSF conference, held near Marseilles, France, was my first OPSF meeting. My experience was a truly valuable one, and I would like to convey my thoughts on a few aspects of the conference.

The small and scenic CIRM foundation contributed to an informal and collaborative atmosphere, bringing together mathematicians from diverse areas and distant geography. I was impressed by the scope of the mathematics discussed, both within and outside the planned lectures. Considering the varied backgrounds of the conference participants, I was surprised at the enthusiasm and overall coherent feel of the meeting. The picturesque setting, with white cliffs towering in the background, made it an idyllic place to share work with others and develop new technical interests.

The plenary lectures drew from a variety of areas and were extremely well delivered (sometimes with a comical flair, as when one speaker used a rather large column as a pointing device). Deciding which of the five parallel sessions of contributed talks to attend was difficult, and I inevitably missed some fascinating talks. Despite this necessary limitation, I was able to attend a large number of lectures on interesting work. In particular, it was nice to see familiar objects studied from very different perspectives.

The activities organized around the conference were memorable, including a boat ride along the beautiful Mediterranean coast from the nearby town of Cassis. A banquet on the same night presented an opportunity to enjoy wonderful French food and to become acquainted with fellow mathematicians from all over the globe. These events showcased the lovely surroundings that have been reflected by numerous French painters. I add to these images my pleasant memories of conversations among the chirping crickets, constant breezes and the vivid canopy of stars in the evening.

I would like to express my thanks to everyone involved in making the conference a success. Because the field of orthogonal polynomials and special functions intersects with so many diverse areas, the personal, professional, and technical connections made at the international OPSF meetings are uniquely important. I think that the value of this year's meeting will be demonstrated by the research inspired from these connections.

Topic #5 -----------   OP-SF NET 14.5   ---------- September 15, 2007

From: Tom Koornwinder thk@science.uva.nl
Subject: Proceedings of Temme Conference

A special issue of *Journal of Computational and Applied Mathematics* has appeared (Volume 207, Issue 2, Pages 165-372 (15 October 2007, online http://www.sciencedirect.com/science/journal/03770427) containing the Proceedings of the conference held in Santander (Spain) during July 4-6, 2005 in honour of Nico Temme on the occasion of his 65th birthday.

In the Preface, the Editors, Amparo Gil, Javier Segura and Jóse Luis López, write: "The contributions of Nico Temme in the field of Asymptotic analysis and the numerical computation of special functions are reflected in more then 100 publications in specialized Journals. His book *Special Functions, An Introduction to the Classical Functions of Mathematical Physics*, is a classical reference in the field. Nico also did important editorial work for journals such as *SIAM Journal on Mathematical Analysis, ZAMP* and *Mathematics of Computation* and he is currently active in the *Digital Library of Mathematical Functions* (update of the classic Handbook of Mathematical Functions, By M. Abramowitz and I. Stegun), which is an ongoing project of NIST.

"The Editors of these proceedings have enjoyed a fruitful and very pleasant collaboration with Nico in which the human qualities equal the scientific ones."

The following articles appear in the Proceedings:

General recurrence and ladder relations of hypergeometric-type
     Functions. Zarzo, A.; Yanez, R.J.; Dehesa, J.S. pp. 166-179

The uniqueness of an orthogonality measure. Driver, K.; Stahl, H. pp. 180-185

On a method for generating inequalities for the zeros of certain functions.
Gatteschi, L.; Giordano, C. pp. 186-191

Theory and numerical evaluation of oddoids and evenoids: Oscillatory cuspoid integrals with odd and even polynomial phase functions. Hobbs, C.A.; Connor, J.N.L.; Kirk, N.P. pp. 192-213

The structure relation for Askey-Wilson polynomials. Koornwinder, T.H. pp. 214-226

Topic #6 ------------   OP-SF NET 14.5   ----------- September 15, 2007

From: SIGMA sigma@imath.kiev.ua
Subject: Vadim Kuznetsov Memorial Issue on Integrable Systems

We are pleased to announce that the

Vadim Kuznetsov Memorial Issue on Integrable Systems and Related Topics

of the open-access journal "Symmetry, Integrability and Geometry: Methods and Applications" (SIGMA) has been completed successfully and is freely available online at the journal's web-site

http://www.emis.de/journals/SIGMA/

We would like to thank all the authors who have published papers in the issue, and to give our special thanks to all the referees for providing constructive reviews. We would also greatly appreciate if you could forward the information about the issue to those of your colleagues who may be interested in the subject.

Topic #7   -----------   OP-SF NET 14.5   ----------- September 15, 2007

From: Mourad Ismail ismail@math.ucf.edu
Subject: The Askey-Bateman Project

The new Askey-Bateman Project will be an Encyclopedia of Special Functions in five volumes plus possibly (although unlikely) a sixth volume on transforms and related topics. Each volume will have its own editor. The volumes are:

Volume 1: Hypergeometric and Basic Hypergeometric Functions, including elliptic hypergeometric functions.

Volume 2: Orthogonal Polynomials, including matrix orthogonal polynomials and biorthogonal rational functions.

Volume 3: Continued Fractions, Number Theory, and Elliptic and Theta Functions.

Volume 4: Equations of Mathematical Physics, including continuous and discrete Painlevé, Lamé and Heun Equations.

Volume 5: Multivariable Special Functions.

Please communicate your suggestions, possible reference material, reprints, … etc to the series editors Mourad Ismail ismail@math.ucf.edu and
Walter Van Assche   walter@wis.kuleuven.be

Topic #8   -----------   OP-SF NET 14.5   -----------   September 15, 2007

From: OP-SF NET Editors
Subject: New book on numerical methods for roots of polynomials

The following information is from the web site www.elsevier.com

NUMERICAL METHODS FOR ROOTS OF POLYNOMIALS - PART I
By J.M. McNamee, York University, Toronto, Canada

Included in series Studies in Computational Mathematics,

Description
This book (along with volume 2 covers most of the traditional methods for polynomial root-finding such as Newton's, as well as numerous variations on them invented in the last few decades. Perhaps more importantly it covers recent developments such as Vincent's method, simultaneous iterations, and matrix methods. There is an extensive chapter on evaluation of polynomials, including parallel methods and errors. There are pointers to robust and efficient programs. In short, it could be entitled "A Handbook of Methods for Polynomial Root-finding". This book will be invaluable to anyone doing research in polynomial roots, or teaching a graduate course on that topic.

Audience: academic faculties and libraries, engineering industry

Contents
1. Evaluation, Convergence, Bounds
2. Sturm Sequences and Greatest Common Divisors

3. Real Roots by Continued Fractions
4. Simultaneous Methods
5. Newton's and Related Methods
6. Matrix Models
Index

Hardbound, 354 pages, publication date: JUN-2007
ISBN-13: 978-0-444-52729-5
ISBN-10: 0-444-52729-X
Imprint: ELSEVIER
Price: Order form
GBP 95, USD 160, EUR 133

Topic #9 -----------   OP-SF NET 14.5   ---------- September 15, 2007
From: Tom Koornwinder thk@science.uva.nl
Subject: New site for CAOP (Computer Algebra and Orthogonal Polynomials)

CAOP is a package for calculating formulas for orthogonal polynomials belonging
to the Askey scheme by Maple. With the present version users can compute
recurrence relations, differential and difference equations or make a plot of every
polynomial in the Askey scheme, without having Maple installed on their own
computer.

The implementation of CAOP was originally done by Rene Swarttouw as part of the
Askey-Wilson-scheme project performed at RIACA in Eindhoven. This was next
installed at University of Amsterdam webpages by Andre Heck and it was
maintained there by Tom Koornwinder.

CAOP has now moved to http://pool-serv1.mathematik.uni-kassel.de/CAOP
at University of Kassel, and it is maintained there by Wolfram Koepf. Some further
development by Rene Swarttouw and Wolfram Koepf has been implemented.
Further extensions by Wolfram Koepf and coworkers in Kassel are envisaged.

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 July and August 2007.

http://aps.arxiv.org/abs/0707.1996
Ratio Asymptotic of Hermite-Padé Orthogonal Polynomials for Nikishin Systems. II
Authors: Abey López García, Guillermo López Lagomasino
Comments: 24 pages, 2 tables
Subjects: Complex Variables (math.CV)

http://aps.arxiv.org/abs/0708.3956
The asymptotic behaviour of recurrence coefficients for orthogonal polynomials with varying exponential weights
Authors: A.B.J. Kuijlaars, P.M.J. Tibboel (K.U. Leuven, Belgium)
Comments: 17 pages, 3 figures
Subjects: Classical Analysis and ODEs (math.CA); Complex Variables (math.CV)

http://aps.arxiv.org/abs/0708.3867
Normal matrix models, dbar-problem, and orthogonal polynomials on the complex plane
Authors: Alexander R. Its, Leon A. Takhtajan
Comments: 14 pages
Subjects: Classical Analysis and ODEs (math.CA); Mathematical Physics (math-ph)

http://aps.arxiv.org/abs/0708.2698
Fisher information of orthogonal polynomials I
Authors: Diego Dominici
Comments: 12 pages
Subjects: Classical Analysis and ODEs (math.CA)

http://aps.arxiv.org/abs/0708.2349
Non-intersecting paths and Hahn orthogonal polynomial ensemble
Authors: Vadim Gorin
Comments: 25 pages, 5 figures
Subjects: Probability (math.PR); Mathematical Physics (math-ph); Combinatorics (math.CO)

http://aps.arxiv.org/abs/0708.2036
Pfaffian Expressions for Random Matrix Correlation Functions
Authors: Taro Nagao
Comments: 28 pages
Subjects: Mathematical Physics (math-ph)

http://aps.arxiv.org/abs/0708.0360
The generalized matrix valued hypergeometric equation
Authors: P. Roman, S. Simondi
Subjects: Mathematical Physics (math-ph); Representation Theory (math.RT)

http://aps.arxiv.org/abs/0707.3510
Analytic solution of the Schrodinger equation for an electron in the field of a molecule with an electric dipole moment
Authors: A. D. Alhaidari
Comments: 20 pages, 1 figure, 4 tables
Subjects: Chemical Physics (physics.chem-ph); Atomic Physics (physics.atom-ph)

http://aps.arxiv.org/abs/0707.2863
Hermite and Gegenbauer polynomials in superspace using Clifford analysis
Authors: Hendrik De Bie, Frank Sommen
Comments: 18 pages, accepted for publication in J. Phys. A
Subjects: High Energy Physics - Theory (hep-th)

http://aps.arxiv.org/abs/0707.2578
Weak convergence of CD kernels and applications
Authors: Barry Simon
Subjects: Spectral Theory (math.SP); Mathematical Physics (math-ph)

http://aps.arxiv.org/abs/0707.2570
Evaluation of effective resistances in pseudo-distance-regular resistor networks
Authors: M. A. Jafarizadeh, R. Sufiani, S. Jafarizadeh
Comments: 30 pages, 7 figures
Subjects: Statistical Mechanics (cond-mat.stat-mech); Other (cond-mat.other)

http://aps.arxiv.org/abs/0707.0425
Random Normal Matrices and Polynomial Curves
Authors: Peter Elbau
Comments: 37 pages
Subjects: Quantum Algebra (math.QA); Probability (math.PR)

http://aps.arxiv.org/abs/0708.2443
HypExp 2, Expanding Hypergeometric Functions about Half-Integer Parameters
Authors: T. Huber, D. Maître
Comments: 38 pages, 7 figures. The package can be downloaded from this http URL
Subjects: High Energy Physics - Phenomenology (hep-ph)

http://aps.arxiv.org/abs/0708.0803
On the all-order epsilon-expansion of generalized hypergeometric functions with integer values of parameters
Authors: M.Yu. Kalmykov, B.F.L. Ward, S.A. Yost
Comments: 12 pages, Latex + amsmath, JHEP3 class packages
Subjects: High Energy Physics - Theory (hep-th); High Energy Physics - Phenomenology (hep-ph); Mathematical Physics (math-ph); Classical Analysis and ODEs (math.CA)

http://aps.arxiv.org/abs/0708.0116
Fast computation of the Gauss hypergeometric function with all its parameters complex with application to the Poschl-Teller-Ginocchio potential wave functions
Authors: N. Michel, M.V. Stoitsov
Comments: 28 pages; submitted to Computer Physics Communications
Subjects: Mathematical Physics (math-ph)

http://aps.arxiv.org/abs/0707.3654
Multiple (inverse) binomial sums of arbitrary weight and depth and the all-order epsilon-expansion of generalized hypergeometric functions with one half-integer value of parameter

Authors: M. Yu. Kalmykov (Baylor U. & Dubna, JINR), B.F.L. Ward, S.A. Yost (Baylor U.)
Comments: 24 pages, latex with amsmath and JHEP3.cls; v2: some typos corrected and a few references added;
Subjects: High Energy Physics – Theory (hep-th); High Energy Physics – Phenomenology (hep-ph); Mathematical Physics (math-ph); Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.1494
Heisenberg Uncertainty Principle for the q-Bessel Fourier transform
Authors: Lazhar Dhaouadi
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.1745
On the Graf's addition theorem for Hahn Exton q-Bessel function
Authors: Lazhar Dhaouadi
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.2007
Functions of q-positive type
Authors: Lazhar Dhaouadi
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.2118
A formula for a quartic integral: a survey of old proofs and some new ones
Authors: Tewodros Amdeberhan, Victor H. Moll
Comments: 10 pages
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.2121
The integrals in Gradshteyn and Ryzhik. Part 6: the beta function
Authors: Victor H. Moll
Comments: 14 pages
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.2122

The integrals in Gradshteyn and Ryzhik. Part 7: Elementary examples
Authors: Tewodros Amdeberhan, Victor H. Moll
Comments: 14 pages
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.2123

The integrals in Gradshteyn and Ryzhik. Part 8: Combinations of powers, exponentials and logarithms
Authors: Victor H. Moll, Jason Rosenberg, Armin Straub, Pat Whitworth
Comments: 9 pages
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.2124

The integrals in Gradshteyn and Ryzhik. Part9: Combinations of logarithms, rational and trigonometric functions
Authors: Tewodros Amdeberhan, Victor H. Moll, Jason Rosenberg, Armin Straub, Pat Whitworth
Comments: 16 pages
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.2241

Etude Des Solutions Meromorphes D'Equations Differentielles
Authors: A. Lesfari
Comments: 21 pages
Subjects: Classical Analysis and ODEs (math.CA); Mathematical Physics (math-ph)

http://arxiv.org/abs/0707.2346

Hardy's theorem for the q-Bessel Fourier transform
Authors: Lazhar Dhaouadi
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.2472

Applications of the q-Fourier Analysis to the Symmetric Moment Problem
Authors: Lazhar Dhaouadi
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.2500
Landen survey
Authors: Dante Manna, Victor H. Moll
Comments: 28 pages, 1 figure
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.2557
Uniform estimates for cubic oscillatory integrals
Authors: Philip T. Gressman
Comments: 22 pages; v2 added references
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.2729
q-Sturm-Liouville theory and the corresponding eigenfunction expansions
Authors: Lazhar Dhaouadi
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.3023
Integral Concentration of idempotent trigonometric polynomials with gaps
Authors: Aline Bonami, Szilárd Gy. Révész
Comments: 42 pages
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.3590
Trigonometric Series via Laplace Transforms
Authors: C. J. Efthimiou
Comments: Version close to the published one
Journal-ref: Mathematics Magazine 79 (2006) 376
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.3663
The Laplace transform of the digamma function: an integral due to Glasser, Manna and Oloa
Authors: Tewodros Amdeberhan, Victor H. Moll
Comments: 10 pages, 1 figure
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.3862

Rational Landen transformations on the real line

Authors: Dante Manna, Victor H. Moll

Comments: 22 pages

Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.3910

Landen transformations and the integration of rational functions

Authors: George Boros, Victor H. Moll

Comments: 20 pages

Journal-ref: Math. Comp. 71, 2002, 649-668

Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.3911

A simple example of a new class of Landen transformation

Authors: Dante Manna, Victor H. Moll

Comments: 12 pages

Journal-ref: Amer. Math. Monthly 114, 2007, 232-241

Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0707.3950

Ramanujan's Harmonic Number Expansion into Negative Powers of a Triangular Number

Authors: Mark B. Villarino

Comments: sharp error estimates and general formulas for Ramanujan's harmonic number expansion; correction of typo in the Ramanujan-Lodge lower bound constant; thanks to Jonathan Post and Martin Fuller; fixed typo in the title

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

http://arxiv.org/abs/0707.4486

A signed analog of Euler's reduction formula for the double zeta function

Authors: David M. Bradley

Comments: 8 pages AMSLaTeX

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

http://arxiv.org/abs/0708.0074
Rational Solutions of the $A_4^{(1)}$ Painlevé Equation
Authors: Kazuhide Matsuda
Comments: 21 pages, 2 figures
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0708.0348
An application of Kapteyn series to a problem from queueing theory
Authors: Diego Dominici
Comments: 2 pages
Subjects: Classical Analysis and ODEs (math.CA)

http://arxiv.org/abs/0708.0946
Asymptotics for Hermite-Pade rational approximants for two analytic functions with separated pairs of branch points (case of genus 0)
Authors: A.I. Aptekarev, A.B.J. Kuijlaars, W. Van Assche
Comments: 102 pages, 31 figures
Subjects: Classical Analysis and ODEs (math.CA); Complex Variables (math.CV)

http://arxiv.org/abs/0708.2265
Solutions of fractional reaction-diffusion equations in terms of Mittag-Leffler functions
Authors: R. K. Saxena, A. M. Mathai, H. J. Haubold
Comments: 22 pages, LaTeX
Subjects: Classical Analysis and ODEs (math.CA); Mathematical Physics (math-ph)

http://arxiv.org/abs/0708.2960
Rational Solutions of the $A_5^{(1)}$ Painlevé Equation
Authors: Kazuhide Matsuda
Comments: 32 pages
Subjects: Classical Analysis and ODEs (math.CA); Commutative Algebra (math.AC); Algebraic Geometry (math.AG)

http://arxiv.org/abs/0708.3107
On the generalised Selberg integral of Richards and Zheng
Authors: S. Ole Warnaar
Comments: 5 pages, to appear in Advances in Applied Mathematics
Subjects: Classical Analysis and ODEs (math.CA); Combinatorics (math.CO)

http://arxiv.org/abs/0708.1690
On fractional Euler-Lagrange and Hamilton equations and the fractional
generalization of total time derivative
Authors: Dumitru Baleanu, Sami I. Muslih, Eqab M. Rabei
Comments: 14 pages, LATEX. accepted for publication in Nonlinear Dynamics
Subjects: Mathematical Physics (math-ph)

http://arxiv.org/abs/0708.1763
Exact asymptotics of the characteristic polynomial of the symmetric Pascal matrix
Authors: Saibal Mitra
Subjects: Mathematical Physics (math-ph)

http://arxiv.org/abs/0708.1589
On the gap probability generating function at the spectrum edge in the case of
orthogonal symmetry
Authors: Peter J. Forrester
Comments: 12 pages, to appear Contemporary Mathematics (Proceedings)
`Integrable Systems, Random Matrices and Applications', edited by J. Baik, T.
Kriecherbauer and K. McLaughlin
Subjects: Mathematical Physics (math-ph)

http://arxiv.org/abs/0707.0667
Information entropy of Gegenbauer polynomials of integer parameter
Authors: Julio I. de Vicente, Silvia Gandy, Jorge Sánchez-Ruiz
Comments: 19 pages, 1 Postscript figure
Journal-ref: J. Phys. A: Math. Theor. 40, 8345-8361 (2007)
Subjects: Mathematical Physics (math-ph); Classical Analysis and ODEs (math.CA);
Quantum Physics (quant-ph)

http://arxiv.org/abs/0707.0712
On the Positivity of the Coefficients of a Certain Polynomial Defined by Two
Positive Definite Matrices
Authors: Christopher J. Hillar, Charles R. Johnson
Comments: 7 pages, J. Statistical Physics
Subjects: Mathematical Physics (math-ph); Optimization and Control (math.OC)

http://arxiv.org/abs/0707.3235
Airy Functions for Compact Lie Groups
Authors: Rahul N. Fernandez, V. S. Varadarajan
Comments: 32 pages, 1 figure
Subjects: Mathematical Physics (math-ph)

Topic #11 -----------   OP-SF NET 14.5   ----------   September 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).

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 #12 -----------   OP-SF NET 14.5   ----------- September 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
with a copy to one of the OP-SF Editors dominicd@newpaltz.edu or
muldoon@yorku.ca .

Contributions to OP-SF NET 14.6 should be sent by December 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
Subscribe by mailing to: poly-request@siam.org
                or to: listproc@nist.gov
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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

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