Today's Topics:

1. Message from the Chair
2. Hausdorff Center workshop
3. New book on Numerical Methods for Special Functions
4. Ramanujan’s Lost Notebook
5. Website and CD-ROM's on the life and work of Ramanujan
6. Preprints in arXiv.org
7. About the Activity Group
8. Submitting contributions to OP-SF NET

Calendar of Events:

2008

January 14 - July 4, 2008: Program: Combinatorics and Statistical Mechanics, Isaac Newton Institute for Mathematical Sciences, Cambridge, United Kingdom
http://www.newton.cam.ac.uk/programmes/CSM/

http://matematicas.univalle.edu.co/~appopt2008/?seccion=anuncio&idioma=EN

May 15-17, 2008: 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
June 3-9, 2008: CONSTRUCTIVE THEORY OF FUNCTIONS
Campos do Jordão, Brazil, June 3-9, 2008
http://www.ibilce.unesp.br/CTF-08

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
http://www.damtp.cam.ac.uk/user/na/FoCM/FoCM08/

June 22 - 28, 2008: 8th International Conference on Symmetries and Integrability of Difference Equations (SIDE 8), Ste-Adele, Quebec, Canada
http://www.crm.umontreal.ca/SIDE8/index_e.shtml

June 22-28, 2008: Combinatorics 2008 - Costermano, Verona, Italy.
http://combinatorics.ing.unibs.it/

July 21-25, 2008: Workshop "Elliptic integrable systems, isomonodromy problems, and hypergeometric functions", Hausdorff Center for Mathematics, Bonn, Germany
http://www.hausdorff-center.uni-bonn.de/elliptic-integrable-systems

August 12-18, 2008: Fifth International Conference of Applied Mathematics and Computing, Plovdiv, Bulgaria
http://math.uctm.edu/conference2008/

August 13-19, 2008: XXVII International Colloquium on Group Theoretical Methods in Physics (Group-27), Yerevan, Armenia
http://theor.jinr.ru/~group27/
September 8-12, 2008: International Workshop on Orthogonal Polynomials and Approximation Theory, in honor to the 60th Birthday of Guillermo López Lagomasino, Madrid. Spain
http://www.uc3m.es/iwopa08/

October 4-5, 2008: AMS Fall Western Section Meeting
Vancouver, Canada, including Special Session on Special Functions and Orthogonal Polynomials, organized by Mizanur Rahman and Diego Dominici,
http://www.ams.org/amsmtgs/2139_program_ss2.html#title

**Topic #1 --------- OP-SF NET 15.1 --------- January 15, 2008**

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

Dear colleagues and friends of the SIAM Activity Group on Orthogonal Polynomials and Special Functions:

Following the recent elections, the Officers of our SIAG/OPSF for the three year term starting January 1, 2008 are:

Chair: Francisco Marcellán
Vice Chair: Peter Clarkson
Secretary: Dan Lozier
Program Director: Peter McCoy

All of us are committed to improving the visibility of our SIAG within the SIAM structure. First of all, we would like to invite people to become members of our SIAG in order to increase our participation and our identity. Second, we invite you to enhance an awareness of the SIAG Newsletter among members and potential contributors, with personal opinions as well as announcements and reports on meetings, professional opportunities, mathematical problems, and suggestions about the general policy of SIAM concerning our research interests. In particular, the place of OP and SF in the SIAM journals is an ongoing concern of many of our members both with regard to both editorial appointments and the scope of the journals. Finally, we must emphasize the importance of organizing meetings within the framework of SIAM activities with special attention to young people interested in orthogonal polynomials and special functions.

14.6, #10
The Hausdorff Center for Mathematics (Bonn, Germany) is organizing a workshop

"Elliptic integrable systems, isomonodromy problems, and hypergeometric functions".


Topics:
* Elliptic completely integrable systems
* Elliptic Painlevé equation
* Elliptic hypergeometric functions
* Univariate and multivariate elliptic biorthogonal functions
* Elliptic determinants and theta functions on root systems

Expected number of participants: around 35.


Organizers and scientific committee: Yu.I. Manin, M. Noumi, E.M. Rains, H. Rosengren, V.P. Spiridonov.

This is a satellite conference to the Fifth European Congress of Mathematics in Amsterdam (July 14-18, 2008).

Further details about the workshop are available on the website
http://www.hausdorff-center.uni-bonn.de/elliptic-integrable-systems
Title: Numerical Methods for Special Functions
Authors: Amparo Gil, Javier Segura, and Nico M. Temme

See for Table of Contents, Preface, and Index:
For a sample chapter on Chebyshev polynomials, see
http://www.siam.org/books/ot99/OT99SampleChapter.pdf

Short Table of Contents:
1 Introduction
  I Basic Methods
2 Convergent and Divergent Series
3 Chebyshev Expansions
4 Recurrence Relations and Continued Fractions
5 Quadrature Methods
  II Further Tools and Methods
6 Continued Fractions
7 Computation of the Zeros of Special Functions
8 Uniform Asymptotic Expansions
9 Other Methods: Padé approximations, Sequence transformations,
  Best rational approximations, Numerical solution of ODEs: Taylor expansion
  method, Other quadrature methods.
  III Related Topics and Examples
10 Inversion of Distribution Functions
11 Further Examples: The Euler summation formula, Approximations of Stirling
  Numbers, Symmetric elliptic integrals, Numerical inversion of Laplace transforms.
  IV Software
12 Associated Algorithms: Airy and Scorer functions of complex arguments,
  Associated Legendre functions of integer and half-integer degrees, Bessel
  functions, Parabolic cylinder functions, Zeros of Bessel functions.

Prof. K. Srinivasa Rao maintains a very rich website http://www.imsc.res.in/~rao/ramanujan/ on the life and work of Ramanujan.

Furthermore, recently a two-CD-ROM set came out on Ramanujan. Part I contains, among other things, some biographical details on Srinivasa Ramanujan in multimedia format along with the scanned contents of his original Notebooks and Collected Papers. Part II contains, among other things, the five volume work entitled "Ramanujan's Notebooks" by Bruce C. Berndt. See detailed information about this CD-ROM set at http://www.cdac.in/html/nmrc/mathgen.asp
However, it is not clear there, how the set can be ordered.

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 November and December 2007.
http://front.math.ucdavis.edu/0711.4940
Title: Means and Hermite Interpolation
Authors: Alan Horwitz
Categories: math.CA Classical Analysis and ODEs
Comments: Submitted for publication to the Journal of Mathematical Analysis and Applications-19 pages. No figures
MSC: 26E60

http://front.math.ucdavis.edu/0711.4696
Title: Elliptic polynomials orthogonal on the unit circle with a dense point spectrum
Authors: Alexei Zhedanov
Categories: math.CA Classical Analysis and ODEs
Comments: 28 pages
MSC: 33E05, 33E20, 33C47

http://front.math.ucdavis.edu/0711.4161
Title: Scaled Asymptotics For Some \( q \)-Series As \( q \) Approaching Unit
Authors: Ruiming Zhang
Categories: math.CA Classical Analysis and ODEs
Comments: 16
MSC: 30E15;33D45.

http://front.math.ucdavis.edu/0711.4043
Title: An introduction to upper half plane polynomials
Authors: Steve Fisk
Categories: math.CA Classical Analysis and ODEs
Comments: 13 pages
MSC: 26C10, 12D10, 30C15

http://front.math.ucdavis.edu/0711.3692
Title: A Short Proof of a Known Relation for Consecutive Power Sums
Authors: Vladimir Shevelev
Categories: math.CA Classical Analysis and ODEs (math.NT Number Theory)
Comments: 4 pages
MSC: 11B68
http://front.math.ucdavis.edu/0711.4986
Title: On highly transcendental quantities which cannot be expressed by integral formulas
Authors: Leonhard Euler
Categories: math.HO History and Overview (math.CA Classical Analysis and ODEs)
Comments: 5 pages, E565
MSC: 01A50; 33-03; 33E20

http://front.math.ucdavis.edu/0711.4739
Title: Finite Gap Jacobi Matrices: An Announcement
Authors: Jacob S. Christiansen, Barry Simon, Maxim Zinchenko
Categories: math.SP Spectral Theory (math.CA Classical Analysis and ODEs)
Comments: 17 pages, 2 figures
MSC: 47B36; 42C05; 47A10; 30F35

http://front.math.ucdavis.edu/0711.2742
Title: A massive Feynman integral and some reduction relations for Appell functions
Authors: M. A. Shpot
Comments: 19 pages. To appear in Journal of Mathematical Physics

http://front.math.ucdavis.edu/0711.2454
Title: Ladder Operators for q-orthogonal Polynomials
Authors: Yang Chen, Mourad E. H. Ismail
Categories: physics.math-ph Mathematical Physics (math.CA Classical Analysis and ODEs)
Comments: 14 pages

http://front.math.ucdavis.edu/0711.1579
Title: Holomorphic dynamics, Painlevé VI equation and Character Varieties
Authors: Serge Cantat (IRMAR), Frank Loray (IRMAR)
Categories: math.DS Dynamical Systems (math.AG Algebraic Geometry; math.CA Classical Analysis and ODEs)
http://front.math.ucdavis.edu/0711.0544
Title: Wall rational functions and Khrushchev's formula for orthogonal rational functions
Authors: Olav Njastad, Luis Velazquez
Categories: math.CA Classical Analysis and ODEs
Comments: 40 pages
MSC: 42C05

http://front.math.ucdavis.edu/0712.4299
Title: P-symbols, Heun Identities, and 3F2 Identities
Authors: Robert S. Maier
Categories: math.CA Classical Analysis and ODEs
Comments: 20 pages
MSC: 33E30 (Primary) 33C05, 33C20, 34M35 (Secondary)

http://front.math.ucdavis.edu/0712.4253
Title: Determinants of elliptic hypergeometric integrals
Authors: E. M. Rains, V. P. Spiridonov
Categories: math.CA Classical Analysis and ODEs
Comments: 17 pages, LaTeX

http://front.math.ucdavis.edu/0712.4106
Title: Orthogonal Polynomials from Hermitian Matrices
Authors: Satoru Odake, Ryu Sasaki
Comments: 52 pages, no figures
Report number: DPSU-07-5, YITP-07-91

http://front.math.ucdavis.edu/0712.3902
Title: Addition Theorems Via Continued Fractions
Authors: Mourad E. H. Ismail, Jiang Zeng
Categories: math.CA Classical Analysis and ODEs (math.CO Combinatorics)
Comments: 34 pages
MSC: 33D15, 33 C15, 30E05. 05A15

http://front.math.ucdavis.edu/0712.3856
Title: Topics in Special Functions
Authors: G. D. Anderson, M. K. Vamanamurthy, M. Vuorinen
Categories: math.CA Classical Analysis and ODEs (math.CV Complex Variables)
Comments: 22 pages
MSC: 33-02, 33B15, 33C05, 33C65, 33E05

http://front.math.ucdavis.edu/0712.3478
Title: The Kadets 1/4 theorem for polynomials
Authors: J. Marzo, K. Seip
Categories: math.CA Classical Analysis and ODEs
Comments: 7 pages
MSC: 26D05; 30D55

http://front.math.ucdavis.edu/0712.3091
Title: Orthogonal polynomials and partial differential equations on the unit ball
Authors: Miguel Pinar, Yuan Xu
Categories: math.CA Classical Analysis and ODEs
Comments: 9
MSC: 33C50, 33E30, 42C05

http://front.math.ucdavis.edu/0712.2738
Title: Orthogonal Laurent polynomials on the unit circle and snake-shaped matrix factorizations
Authors: Ruymon Cruz Barroso, Steven Delvaux
Categories: math.CA Classical Analysis and ODEs
Comments: 29 pages, 5 figures

http://front.math.ucdavis.edu/0712.2125
Title: On an identity by Pieter de Jong. I
Authors: Tom H. Koornwinder, Michael J. Schlosser
Categories: math.CA Classical Analysis and ODEs
Comments: 6 pages
MSC: 33-01, 33B20, 33C05, 13F07

http://front.math.ucdavis.edu/0712.1460
Title: Bounds on Tur{á}n determinants
Authors: Christian Berg (University of Copenhagen), Ryszard Szwarc (University of Wroclaw)
Categories: math.CA Classical Analysis and ODEs
MSC: 33C45;26D07
Title: An expansion for polynomials orthogonal over an analytic Jordan curve
Authors: Erwin Miña-Díaz
Categories: math.CA Classical Analysis and ODEs (math.CV Complex Variables)
Comments: 15 pages, 1 figure
MSC: 05E35

Title: Non-intersecting squared Bessel paths and multiple orthogonal polynomials for modified Bessel weights
Authors: A. B. J. Kuijlaars, A. Martinez-Finkelshtein, F. Wielonsky
Categories: math.CA Classical Analysis and ODEs (math.PR Probability Theory; physics.math-ph Mathematical Physics)
Comments: 59 pages, 11 figures

Title: An algorithm for evaluating the Gamma function and ramifications
Authors: D. Karayannakis
Categories: math.CA Classical Analysis and ODEs
Comments: 12 pages

Title: Generalized Bochner theorem: characterization of the Askey-Wilson polynomials
Authors: Luc Vinet, Alexei Zhedanov
Categories: math.CA Classical Analysis and ODEs
Comments: 16 pages
MSC: 33C45; 42C05

Title: Elliptic solutions of the Toda chain and a generalization of the Stieltjes-Carlitz polynomials
Authors: Alezei Zhedanov
Categories: math.CA Classical Analysis and ODEs
Comments: 36 pages, submitted to Ramanujan J
MSC: 33C47; 33E05; 37K10
http://front.math.ucdavis.edu/0712.4002
Title: On the irrationality of Ramanujan's mock theta functions and other q-series at an infinite number of points
Authors: Angelo B. Mingarelli
Categories: math.NT Number Theory (math.CA Classical Analysis and ODEs)
MSC: 11J72

http://front.math.ucdavis.edu/0712.1332
Title: Ramanujan-type formulae for $1/\pi$: A second wind?
Authors: Wadim Zudilin
Categories: math.NT Number Theory (math.CA Classical Analysis and ODEs)
Comments: 13 pages
MSC: 11F11, 11Y60, 33C20 (Primary); 05A19, 11B65, 11J82, 11M06, 14H52, 14J32, 33C75, 33F10, 34M50, 40G99, 65B10, 65Q05 (Secondary)

http://front.math.ucdavis.edu/0711.4030
Title: Pauli Pascal Pyramids, Pauli Fibonacci Numbers, and Pauli Jacobsthal Numbers
Authors: Martin Erik Horn
Categories: math.GM General Mathematics
Comments: 33 pages, 22 figures

http://front.math.ucdavis.edu/0711.0481
Title: On q-deformed Stirling numbers
Authors: Yilmaz Simsek
Categories: math.NT Number Theory (math.GM General Mathematics)
Comments: 7 pages
MSC: 11B39, 11B68, 11B73

http://front.math.ucdavis.edu/0712.0934
Title: The cycle problem: an intriguing periodicity to the zeros of the Riemann zeta function
Authors: David D. Baugh (Rice University)
Categories: math.GM General Mathematics
Comments: 5 pages, 9 figures
MSC: 11Y40, 11M26
http://front.math.ucdavis.edu/0711.4432
Title: Generalized Christoffel-Darboux formula for classical skew-orthogonal polynomials
Authors: Ghosh Saugata
Categories: physics.math-ph Mathematical Physics
Comments: 30 pages

http://front.math.ucdavis.edu/0711.4082
Title: Peakons and Cauchy Biorthogonal Polynomials
Authors: M. Bertola, M. Gekhtman, J. Szmigielski
Comments: 55 pages

http://front.math.ucdavis.edu/0711.3408
Title: New connection formulae for some q-orthogonal polynomials in q-Askey scheme
Authors: Abdelkader Yanallah (LPQ3M, LAPTH), Mohammed Brahim Zahaf (LPQ3M, LAPTH)
Report number: LAPTH-1215/07

http://front.math.ucdavis.edu/0712.1046
Title: Polylogarithms, hyperfunctions and generalized Lipschitz summation formulae
Authors: Stefano Marmi, Piergiulio Tempesta
Categories: math.NT Number Theory (math.CV Complex Variables; physics.math-ph Mathematical Physics)
Comments: 15 pages

http://front.math.ucdavis.edu/0711.4412
Title: Stirling's formula derived simply
Authors: Joseph B. Keller
Categories: math.CO Combinatorics
Comments: 4 pages
MSC: 33B15; 11B37
http://front.math.ucdavis.edu/0711.1373
Title: Partition Polynomials: Asymptotics and Zeros
Authors: Robert P. Boyer, William M. Y. Goh
Categories: math.CO Combinatorics (math.NT Number Theory)
MSC: 05C38, 15A15, 05A15, 15A18

http://front.math.ucdavis.edu/0711.1400
Title: Polynomials associated with Partitions: Polynomials associated with Partitions: Their Asymptotics and Zeros
Authors: Robert P. Boyer, William M. Y. Goh
Categories: math.CO Combinatorics
Comments: 4 figures

http://front.math.ucdavis.edu/0712.4185
Title: Appell polynomials and their relatives II. Boolean theory
Authors: Michael Anshelevich
Categories: math.OA Operator Algebras (math.CO Combinatorics)
MSC: Primary 46L53; Secondary 46L54, 05E35, 30B70

http://front.math.ucdavis.edu/0712.4087
Title: On the difference of partial theta functions
Authors: Alexander Berkovich
Categories: math.NT Number Theory (math.CO Combinatorics)
Comments: 6 pages
MSC: 33D15

http://front.math.ucdavis.edu/0712.3665
Title: Sharp tridiagonal pairs
Authors: Kazumasa Nomura, Paul Terwilliger
Categories: math.RA Rings and Algebras (math.CO Combinatorics)
Comments: 24 pages
MSC: 05E35

http://front.math.ucdavis.edu/0712.1707
Title: Stokes matrices of hypergeometric integrals
Authors: Alexey Glutsyuk, Christophe Sabot
Categories: math.DS Dynamical Systems (math.CV Complex Variables)
Comments: 2 figures
MSC: 34M40
http://front.math.ucdavis.edu/0712.1656
Title: Special Values of Generalized Polylogarithms
Authors: S. A. Zlobin
Categories: math.NT Number Theory (math.CV Complex Variables)
Comments: 32 pages
MSC: 11M06; 11Y60; 30B10; 30E20; 33B15; 33B30; 33C05

http://front.math.ucdavis.edu/0711.5005
Title: Fast methods to compute the Riemann zeta function
Authors: Ghaith Ayesh Hiary
Categories: math.NT Number Theory
Comments: Corrected Typos
MSC: 11Y16

http://front.math.ucdavis.edu/0711.5002
Title: A nearly-optimal method to compute the truncated theta function, its derivatives, and integrals
Authors: Ghaith Ayesh Hiary
Categories: math.NT Number Theory
Comments: Two figures. Corrected Typos
MSC: 11Y16

http://front.math.ucdavis.edu/0711.4898
Title: Values of coefficients of cyclotomic polynomials II
Authors: Chun-Gang Ji, Wei-Ping Li, Pieter Moree
Categories: math.NT Number Theory
Comments: 5 pages
MSC: 11B83; 11C08

http://front.math.ucdavis.edu/0712.0705
Title: A quantum mechanical model of the Riemann zeros
Authors: German Sierra
Comments: 42 pages, 12 figures
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:


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

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 #8 ----------- OP-SF NET 15.1 ----------- January 15, 2008**

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 15.2 should be sent by March 1, 2008.

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  
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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 (2008-2010) are:
   Francisco J. Marcellán, Chair
   Peter A. Clarkson, Vice Chair
   Daniel W. Lozier, Secretary
   Peter A. McCoy, Program Director
The appointed officers are:
   Diego Dominici, OP-SF NET co-editor
   Martin Muldoon, OP-SF NET co-editor
   Bonita Saunders, Webmaster