

OP-SF NET – Volume 28, Number 6 – November 15, 2021

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:

January 10–14, 2022

9th International Conference on Computational Methods and Function Theory (CMFT 2021)
Federico Santa María Technical University, Valparaíso, Chile
<http://cmft2021.inf.utfsm.cl/>

May 23–27, 2022

Baylor Analysis Fest: From Operator Theory to Orthogonal Polynomials, Combinatorics,
and Number Theory
Baylor University, Waco, TX, USA
<https://tinyurl.com/BAFconference>

June 20–24, 2022—~~canceled due to coronavirus pandemic.~~

Combinatorics around the q -Onsager algebra, celebrating the 65th birthday of Paul Terwilliger
Kranjska Gora, Slovenia
<https://conferences.famnit.upr.si/event/15/overview>

June 13–17, 2022—new dates due to coronavirus pandemic.

OPSFA-16

Centre de Recherches Mathématiques, Montréal, Quebec, Canada

http://www.crm.umontreal.ca/2022/OPSFA22/index_e.php

July 5–8, 2022—new dates due to coronavirus pandemic.

Functional Analysis, Approximation Theory and Numerical Analysis (FAATNA)

Matera, Italy

<http://web.unibas.it/faatna20/>

August 8–12, 2022

OPSF-S9: Radboud OPSFA Summer School

Nijmegen, The Netherlands

<https://www.ru.nl/radboudsummerschool/courses/2022/opsfa-summer-school/>

Topic #1 ——— OP – SF Net 28.6 ——— November 15, 2021

From: Luc Vinet (vinet@crm.umontreal.ca)

Subject: Call for Proposals: Mini Symposia at OPSFA-16

Call for proposals for Mini Symposia at OPSFA-16

Proposals for Mini Symposia to be held in the framework of the upcoming OPSFA conference are invited. These Mini Symposia should cover recent developments of high interest in the different fields of the meeting. They should feature invited speakers and should allow for a number of contributed talks of 25+5 minute duration. They could span one or two sessions (days) with 7 speakers per session.

The submission should include the topic, the names of the organizers and those of 5 invited speakers per session who have been contacted and have agreed to be part of the Mini Symposium. The deadline for submission is December 15, 2021. The proposals will be reviewed by the International Organizing Committee and confirmed before at the beginning of 2022.

Applications for the Mini Symposia can be submitted via this [Google form](#).

For more information on the 16th International Symposium on Orthogonal Polynomials, Special Functions and Applications, please see http://www.crm.umontreal.ca/2022/OPSFA22/index_e.php.

From: Victor H. Moll (vhm@tulane.edu)

Subject: Announcement: A new edition of Whittaker & Watson by **Victor H. Moll**

My relation with the new edition of
“A Course of Modern Analysis”
by
E. T. Whittaker and G. N. Watson

The first time I saw a copy of *A Course of Modern Analysis* by E. T. Whittaker and G. N. Watson was in 1976 (from now on this text is referred to as WW). At the time, I was an undergraduate student in Chile at Universidad Santa Maria studying under the supervision of Professor Luis Salinas. This book looked to me different than the usual mathematical texts circulating in Latin America in the 1970s. This book was the first text to bring the analysis developed ‘in the continent’ (France and Germany) to the English-speaking audience. On his shelf, next to WW, Luis had a copy of Ince’s text, “Ordinary Differential Equations.” He offered me to have a reading course based on these books. I declined, perhaps enamored at that time with the softer dynamical systems approach to differential equations. My loss. Blame it on the inexperience of youth and being impressed with newly produced books. My second encounter with WW was in graduate school, while walking around the isles of the Courant Library. My admiration for older books had grown then as my taste in mathematics was leaning towards the 19th century style. At that time in graduate school, I could not imagine I would someday be involved in producing a new edition. The story goes like this.

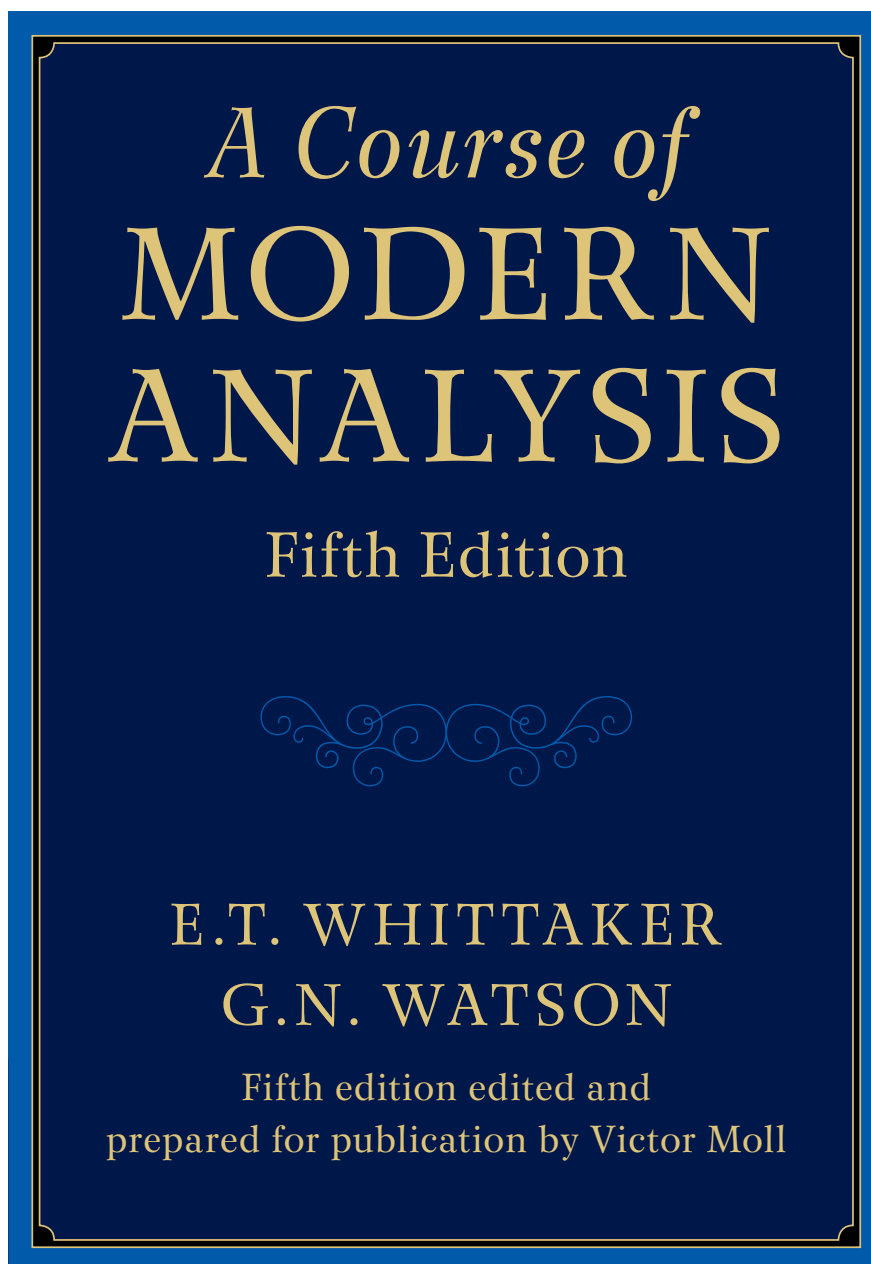
As time passed, I had slowly become profoundly impressed by this text. Browsing each chapter, I will realize that many of the examples appearing in current analysis books come from WW. From time to time, while teaching graduate courses, I will search in WW for nice ways to present the material in the class and interesting exercises to challenge my students. This had the pleasant consequence of me becoming very familiar with it.

During the Joint Mathematics Meetings, I tend to spend a lot of time at the book exhibits. Since my first book was published by Cambridge University Press, it is my habit to visit their booth quite often. In one of those occasions I heard from David Tranah, currently the editor director of Cambridge University Press. David told me of an idea: he wanted to have a modern looking version of WW. The first edition of the book appeared in 1902 and the fourth edition in 1927 had been reprinted several times. The sixth printing of this last edition appeared in 2006. Not much has been changed since the original first edition. David told me that they were planning to retype the whole book in \LaTeX and asked my opinion on this project. My initial reaction was very positive. After a series of email correspondence, he asked me if I was interested in supervising this project. Without thinking twice I said yes. *How can one pass such an opportunity?* The original idea was for me to supervise the \LaTeX document and perhaps to write comments at the end of each chapter.

At the end my role was to write an introduction indicating the content of each of the 23 chapters and to describe how the material is (or mostly is not) covered in the typical graduate education in American universities and also to present a small sample on how the topics in WW appear in current research projects. This is, without a doubt, a very personal opinion. A second part of my involvement in this project was to try to make sure that the current volume is a reproduction of the original one. No new material has been added. The bibliography has been written in modern style and we have made an effort to verify that the references are correct. The text has not been modified even though some of their wording may lead to confusion: for instance, ‘Example’ is used by the authors to denote ‘Exercise’. Also the word ‘shew’ has been kept. Footnotes have been reduced to a minimum, the original

text contains many of them, and have been incorporated into the text. An effort has been made to check every formula, both the mathematical as well as the typing of it. The original document was converted into \LaTeX by members of the staff of Cambridge University Press, so extra care was taken to make sure that the formulas are typed correctly. The errors remaining in the current volume are my responsibility.

This is a wonderful book. It is my hope that younger generations will benefit from it and learn to love it as much as I did. My thanks to the staff of Cambridge University Press for producing such a wonderful looking volume.



Cover of new CUP edition of Whittaker and Watson.

[Cambridge University Press](#)
[Amazon](#)

Victor H. Moll, Department of Mathematics, Tulane University, New Orleans, LA 70118
vhm@tulane.edu

From: Juan J. Moreno Balcázar (balcazar@ual.es)

Subject: Report on 8th European Congress of Mathematics by **Juan J. Moreno Balcázar**

Report on the Workshop “Orthogonal Polynomials and Special Functions” within the 8th European Congress of Mathematics.

Dates: June 22–23, 2021, Portorož, Slovenia.

Following a tradition in the European Congress of Mathematics a workshop on Orthogonal Polynomials and Special Functions was organized by people of the community of orthogonal polynomials. In this occasion Galina Filipuk, Paco Marcellán, and Juan José Moreno–Balcázar were in charge of the organization of such a workshop.

The congress was scheduled for July 2020. However, the pandemic we are suffering led to it being changed to June 2021 with the hope of having a face-to-face congress. Finally, the congress was hybrid, with some people in Portorož but most of the participants online. We decided to go ahead with the workshop to support the congress.

Our workshop was scheduled for the afternoons of June 22–23. We had 13 nice talks. Unfortunately, Emil Horozov didn’t deliver his talk due to illness. According to the rules of the congress, the talks were divided in three kind of presentations: keynote, standard and short. Our keynote speaker was Arno Kuijlaars from KU Leuven with the talk “Periodic random tiling models and non–Hermitian orthogonality”. That was the first talk with all the participants attending online via Zoom on a hot summer afternoon (at least in Spain!). The afternoon continued with the talks by Ana Foulquié (University of Aveiro) and Paweł Woźny (University of Wrocław). After a short break, unfortunately without coffee and cookies, even online, the talks were given by Andrei Martínez Finkelshtein (Baylor University and Universidad de Almería), Luis Velázquez (Universidad de Zaragoza), and Cleonice Bracciali (UNESP – Universidade Estadual Paulista). On this day the chairpersons were Paco Marcellán (Universidad Carlos III de Madrid), Arno and Erik Koelink (Radboud Universiteit).

The second day began with a talk by Erik Koelink and continued without break (no coffee, no break) with the talks by Teresa Pérez (Universidad de Granada), Ester Pérez Sinusía (Universidad de Zaragoza), Gergő Nemes (Alfréd Rényi Institute of Mathematics), Juan F. Mañas–Mañas (Universidad de Almería), Misael Marriaga (Universidad Rey Juan Carlos), and Héctor Pijeira (Universidad Carlos III de Madrid). The chairpersons were Andrei, Teresa and myself.

Several interesting topics were tackled, such as non–Hermitian orthogonality, matrix valued orthogonal polynomials, Sobolev orthogonal polynomials, q -polynomials, random walks, dual bases, zeros of cylinder functions, quadrature rules, Khrushchev formulas, Poncelet’s Theorem, orthogonal functions, or factorial series. The list of the talks is:

- Periodic random tiling models and non–Hermitian orthogonality, Arno Kuijlaars.
- Multiple Orthogonal Polynomials and Random Walks, Ana Foulquié.
- Dual bases and orthogonal polynomials, Paweł Woźny.
- Poncelet’s Theorem and Orthogonal Polynomials, Andrei Martínez Finkelshtein.
- Khrushchev formulas for orthogonal polynomials, Luis Velázquez.
- On some positive quadrature rules on the unit circle, Cleonice Bracciali.
- Matrix valued multivariable orthogonal polynomials with BC_2 -symmetry, Erik Koelink.
- Multivariate hybrid orthogonal functions, Teresa Pérez.
- Converting divergent asymptotic series into convergent series: factorial series for Laplace-type integrals, Ester Pérez Sinusía.

- A proof of a conjecture of Elbert and Laforgia on the zeros of cylinder functions, Gergő Nemes.
- Local asymptotics for some q -hypergeometric polynomials, Juan F. Mañas–Mañas.
- Bivariate Koornwinder–Sobolev orthogonal polynomials, Misael Marriaga.
- Comparative asymptotics of rational modified orthogonal polynomials, Héctor Pijeira.

In conclusion, it was a nice workshop with interesting talks and questions, although we missed the usual face-to-face situation from pre-pandemic times.

Juan J. Moreno–Balcázar, on behalf of the organizing committee of the workshop formed by Galina Filipuk, Paco Marcellán and me.

Topic #4 ——— OP – SF Net 28.6 ——— November 15, 2021

From: Jan Felipe van Diejen (diejen@inst-mat.usalca.cl)

Subject: Report on MCA 2021 Special Session by **Jan Felipe van Diejen**

Report on the [Mathematical Congress of the Americas](#) (MCA) 2021 Special Session: Special Functions and Orthogonal Polynomials, Buenos Aires, Argentina, July 12–13, 2021.

The Mathematical Congress of the Americas (MCA) is a quadrennial meeting organized by [The Mathematical Council of the Americas](#) (MCoFA). This is a network for professional mathematical societies and research institutes based in the Americas, dedicated to promoting the development of mathematics in North- and South America. The MCA 2021 was hosted by the Universidad de Buenos Aires as a virtual meeting from July 9–23. The two previous congresses of this series were held in Guanajuato, Mexico (MCA 2013) and Montreal (MCA 2017), respectively. The setup of the MCA is somewhat similar in spirit to that of the ICM: on opening day prizes are awarded in various categories to junior and senior mathematicians. The rest of the program consists of prize lectures, plenary talks, invited talks, and a wide variety of presentations in thematic sessions. Through an initiative of Diego Dominici, and with the help of Luis E. Garza and myself, a two-day Special Session on Special functions and Orthogonal Polynomials was incorporated in the schedule during the first week of the conference.

The program of this session contemplated on the first day (July 12) five one-hour presentations (including questions):

- Linear spectral transforms, matrix factorizations and orthogonal polynomials Francisco Marcellán – Universidad Carlos III de Madrid, Spain
- Some properties of the generalized mixed type Bernoulli–Gegenbauer polynomials Yamilet Quintana – Simón Bolívar University, Venezuela
- A CMV connection between orthogonal polynomials on the unit circle and the real line María-José Cantero – Universidad de Zaragoza, España
- q -Fractional Askey–Wilson Integrals and Related Semigroups of Operators Mourad Ismail – University of Central Florida, USA
- Signal processing miracles and the Korteweg–de Vries equation. F. Alberto Grunbaum – UC Berkeley, USA.

The second day (July 13) five more talks were scheduled in the same format:

- An algebraic treatment of the Askey biorthogonal polynomials on the unit circle Luc Vinet—CRM, Canada
- Unified construction of all hypergeometric and basic hypergeometric orthogonal polynomial sequences. Luis Verde-Star—Universidad Autónoma Metropolitana, Iztapalapa, México

- Relation between a class of Sobolev orthogonal polynomials on the unit circle and a subclass of the continuous dual Hahn polynomials Cleonice Bracciali—UNESP—Univ Estadual Paulista, Brazil
- Some results related to Bispectral Functions. Ignacio Zurrian—CONICET, Argentina
- Stochastic factorizations of birth–death chains and Darboux transformations Manuel D. de la Iglesia—Universidad Nacional Autónoma de México, México.

The full program of MCA 2021 is published on the conference [web–page](#) and video recordings of the talks can be found on the MCA 2021 [Youtube channel](#).

In particular, the talks of the MCA 2021 Special Session: Special functions and orthogonal polynomials are contained in the [Special Session channel](#).

On a personal note I might add that for me this was the first time I was involved in the organization of a fully online event. In spite of initial worries about potential technical fails, different time zones, and Murphy’s law in general, things went pretty smooth not in the least thanks to the technical support provided by Lorena Correa and Gastón García from the local organization of MCA 2021. Although it was a pity to have missed the opportunity to attend an on–site meeting in Buenos Aires as originally planned, there were certainly advantages in terms of costs and time management to participating in this international event straight from my home–office!

Topic #5 ——— OP – SF Net 28.6 ——— November 15, 2021

From: OP–SF Net Editors

Subject: Two remembrances of **Brian David Sleeman** (1939–2021)

**Two remembrances of
Brian David Sleeman
(August 4, 1939—July 19, 2021)**

by **Browne and Levine**

Below are two remembrances of Brian Sleeman from some of his colleagues:

Patrick Browne and Howard A. Levine.

For a link to Sleeman’s obituary, see

https://www.leeds.ac.uk/secretariat/obituaries/2021/sleeman_brian.html.

Patrick Browne, Department of Mathematics and Statistics,
University of Saskatchewan, Saskatoon, Saskatchewan, Canada.

Brian Sleeman—a brief remembrance

My long-time close friend and colleague Brian Sleeman passed away in Dundee, Scotland on July 19, 2021. Brian was a student of Felix Arscott and so his interest in special functions comes via Arscott. Brian's professional career was spent at the University of Dundee and then The University of Leeds. He and his wife Julie then retired back to Dundee.

I first interacted with Brian in the early 1970's via his interest in multiparameter spectral theory and so began our friendship and collaboration. At that time the Dundee department was very active in the area of spectral theory of differential operators and this was reflected in speakers and sessions at the biennial (and famous) Dundee conferences on differential equations. In fact, Brian was a keen participant in the planning and execution of these meetings and in later years, when the main thrust of the meetings had moved to other areas of differential equations— especially mathematical biology—he was the central organiser. Those of us who regularly looked forward to and attended these meetings owe him a deep debt of gratitude for these contributions to mathematics.

Although my connections with Brian remained in the spectral theory realm, his interests ranged through many aspects of applied analysis, most notably perhaps being his work in mathematical biology and scattering theory. Overall, his work was always rooted in science but the mathematics of the various situations under study was always the ultimate key to a better understanding of the physical problem. In this way he was genuinely an applied mathematician, but a mathematician at heart.

Brian was an accomplished choir member and sang with a number of choirs including the Leeds Festival Chorus.

On a personal level, he was an inspiring supervisor to his many students and a sympathetic and enthusiastic colleague to those who worked with him. In this regard, I was fortunate to be among this number. His wife and children were always very welcoming to research visitors and, in my own case, became very close to my wife and myself.

Brian Sleeman was a wonderful friend and colleague and I have countless memories of the many happy times we spent together. He is deeply missed by all of us who had the good fortune to know and work with him.

Howard A. Levine, Department of Mathematics, Iowa State University, Ames, Iowa, USA.

Memoriam for Brian Sleeman, FSRE (1939–2021)

Brian Sleeman and I first crossed paths in the Spring of 1969 when he was a Senior Lecturer at the University of Dundee and I was just finishing up a post-doc at the Swiss Federal Technical University (ETH). Norris Everitt and Douglas Jones had organized the yearlong North British Symposium on Differential Equations. Brian was very interested in some ordinary differential equations arising in a model for signal transmission in squid axons. I on the other hand, was interested in ill posed problems in partial differential equations. Little did I know that this apparent clash of interests would lead to a lifelong friendship culminating in our work together in the mid 90's. So how did all of this come about?

First, although being born thousands of miles and a few years apart, and, as he liked to say, speaking different languages, we came from similar backgrounds and got along very well together. Second, we stayed in contact over the years by sharing our mathematical interests through the exchange of preprints and reprints. He was particularly interested in my work on singularity formation in PDE's and we wrote our joint paper on the subject in 1985. Aware that I had an undergraduate degree in chemistry, he sent me some papers concerning modeling angiogenesis in malignant tumor growth. Now I was hooked on one of his interests. In 1997 we published our paper on chemically induced cell movement i.e., chemotaxis. In the next few years, together with Marit Nilsen-Hamilton, we wrote eight more papers about various aspects of angiogenesis and its inhibition. These papers were well received, due in no small measure to his insights and enthusiasm. His scientific creativity and the breadth of his intellectual interests were an inspiration to me as well as to many others.

The last time I spoke with him, a few months before he died, he seemed in good spirits and hopeful that the chemotherapy would lead to a positive outcome. Indeed, one of the things I liked most about him was his optimistic outlook on life in general. He lived it to the fullest.

Topic #6 OP – SF Net 28.6 November 15, 2021

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 September and October 2021. This list has been separated into two categories.

OP-SF Net Subscriber E-Prints

<http://arxiv.org/abs/2109.00156>

Fourier series representation of Ferrers function P
Hans Volkmer

<http://arxiv.org/abs/2109.00394>

Higher Depth False Modular Forms
Kathrin Bringmann, Jonas Kaszian, Antun Milas, Caner Nazaroglu

<http://arxiv.org/abs/2109.00529>

The asymptotic expansion of the Bateman and Havelock functions of large order and argument
R. B. Paris

<http://arxiv.org/abs/2109.00843>

Computation of Power Law Equilibrium Measures on Balls of Arbitrary Dimension
Timon S. Gutleb, José A. Carrillo, Sheehan Olver

<http://arxiv.org/abs/2109.01054>

Error bounds for the asymptotic expansions of the Hermite polynomials
Wei Shi, Xiang-Sheng Wang, Roderick Wong

<http://arxiv.org/abs/2109.01452>

Odd and even q -type Lidstone polynomial sequences
Zeinab S. I. Mansour, Maryam Al Towailb

<http://arxiv.org/abs/2109.01715>

Left-Definite Variations of the Classical Fourier Expansion Theorem, Part II
Lance L. Littlejohn, Edward L. Smith, Anton Zettl

<http://arxiv.org/abs/2109.02827>

Expansion formulas for multiple basic hypergeometric series over root systems
Gaurav Bhatnagar, Surbhi Rai

<http://arxiv.org/abs/2109.05069>

Bound-state solutions of the Schrödinger equation for two novel potentials
A. D. Alhaidari, I. A. Assi

<http://arxiv.org/abs/2109.05359>

Experimenting with Apery Limits and WZ pairs
Robert Dougherty-Bliss, Doron Zeilberger

<http://arxiv.org/abs/2109.06147>

A characterization of continuous q -Jacobi, Chebyshev of the first kind and Al-Salam Chihara polynomials
K. Castillo, D. Mbouna, J. Petronilho

<http://arxiv.org/abs/2109.06428>

Different Hamiltonians for the Painlevé P_{IV} equation and their identification using a geometric approach
Anton Dzhamay, Galina Filipuk, Adam Ligeza, Alexander Stokes

<http://arxiv.org/abs/2109.06718>

Free Fermion Six Vertex Model: Symmetric Functions and Random Domino Tilings
Amol Aggarwal, Alexei Borodin, Leonid Petrov, Michael Wheeler

<http://arxiv.org/abs/2109.06968>

Differential equations for the recurrence coefficients of semi-classical orthogonal polynomials and their relation to the Painlevé equations via the geometric approach
Anton Dzhamay, Galina Filipuk, Alexander Stokes

<http://arxiv.org/abs/2109.08392>

Arbitrary-precision computation of the gamma function
Fredrik Johansson

<http://arxiv.org/abs/2109.08554>

Mahler measure numerology
Wadim Zudilin

<http://arxiv.org/abs/2109.08579>

An asymptotic approach to proving sufficiency of Stein characterisations
Ehsan Azmoodeh, Dario Gasbarra, Robert E. Gaunt

<http://arxiv.org/abs/2109.08802>

Quadrature by fundamental solutions: kernel-independent layer potential evaluation for large collections of simple objects
David B. Stein, Alex H. Barnett

<http://arxiv.org/abs/2109.09928>

L-convex polyominoes and 201-avoiding ascent sequences
Anthony Guttmann, Vaclav Kotesovec

<http://arxiv.org/abs/2109.10218>

Modular transformations and the elliptic functions of Shen
P. L. Robinson

<http://arxiv.org/abs/2109.10394>

Distributions on partitions arising from Hilbert schemes and hook lengths
Kathrin Bringmann, William Craig, Joshua Males, Ken Ono

<http://arxiv.org/abs/2109.11337>

A modification of the Prudnikov and Laguerre polynomials
Semyon Yakubovich

<http://arxiv.org/abs/2109.12972>

Apéry limits and Mahler measures
Wadim Zudilin

<http://arxiv.org/abs/2109.13485>

Classical length-5 pattern-avoiding permutations
Nathan Clisby, Andrew R. Conway, Anthony J. Guttmann, Yuma Inoue

<http://arxiv.org/abs/2109.13700>

Representation by degenerate Frobenius-Euler polynomials
Taekyun Kim, Dae San Kim

<http://arxiv.org/abs/2109.13794>

A root elliptic function in signature four
P. L. Robinson

<http://arxiv.org/abs/2109.14089>

An Experimental (yet fully rigorous!) Study of a certain “Measure Of Disarray” that 12-year Noga Alon Proved was always Even
Shalosh B. Ekhad, Doron Zeilberger

<http://arxiv.org/abs/2109.14380>

Exercising in complex Mahler measures: diamonds are not forever
Berend Ringeling, Wadim Zudilin

<http://arxiv.org/abs/2110.00401>

Classical orthogonal polynomials revisited
K. Castillo, J. Petronilho

<http://arxiv.org/abs/2110.01153>

Solvability in classical mechanics and algebraic Heun observables
Luc Vinet, Alexei Zhedanov

<http://arxiv.org/abs/2110.02287>

BC_2 type multivariable matrix functions and matrix spherical functions
Erik Koelink, Jie Liu

<http://arxiv.org/abs/2110.02615>

On Hecke-type double-sums and general string functions for the affine Lie algebra $A_1^{(1)}$
Eric T. Mortenson

<http://arxiv.org/abs/2110.03038>

The Dubov–Eleonskii–Kulagin polynomials and a modification of the Christoffel formula
Rachel Bailey, Maxim Derevyagin

<http://arxiv.org/abs/2110.03521>

The missing label of \mathfrak{su}_3 and its symmetry
N. Crampe, Loic Poulain d’Andecy, Luc Vinet

<http://arxiv.org/abs/2110.04059>

Exceptional Gegenbauer polynomials via isospectral deformation
María Ángeles García–Ferrero, David Gómez–Ullate, Robert Milson, James Munday

<http://arxiv.org/abs/2110.06008>

A variational principle for Gaussian lattice sums
Laurent Bétermin, Markus Faulhuber, Stefan Steinerberger

<http://arxiv.org/abs/2110.06690>

Asymptotic expansion of the Wright function for large variable and parameter
R. B. Paris

<http://arxiv.org/abs/2110.10583>

Rapid computation of special values of Dirichlet L -functions
Fredrik Johansson

<http://arxiv.org/abs/2110.10856>

The positive Grassmannian, the amplituhedron, and cluster algebras
Lauren K. Williams

<http://arxiv.org/abs/2110.11441>

Algebraic \mathcal{L}_q -norms and complexity-like properties of Jacobi polynomials–Degree and parameter asymptotics
Nahual Sobrino, Jesus S. Dehesa

<http://arxiv.org/abs/2110.12219>

On Meijer's G function $G_{p,p}^{m,n}$ for $m + n = p$
D. B. Karp, E. G. Prilepkina

<http://arxiv.org/abs/2110.13247>

Linked partition ideals and the Alladi–Schur theorem
George E. Andrews, Shane Chern, Zhitai Li

<http://arxiv.org/abs/2110.13305>

Recurrence equations involving different orthogonal polynomial sequences and applications
A. S. Jooste, D. D. Tcheutia, W. Koepf

<http://arxiv.org/abs/2110.13420>

q -Pearson pair and moments in q -deformed ensembles
Peter J. Forrester, Shi-Hao Li, Bo-Jian Shen, Guo-Fu Yu

<http://arxiv.org/abs/2110.15913>

The Jacobi operator and its Donoghue m -functions
Fritz Gesztesy, Mateusz Piorkowski, Jonathan Stanfill

Other Relevant OP–SF E-Prints

<http://arxiv.org/abs/2109.00027>

Hypergeometric Motives
David P. Roberts, Fernando Rodriguez Villegas

<http://arxiv.org/abs/2109.00241>

Zinbiel algebras and multiple zeta values
Frédéric Chapoton

<http://arxiv.org/abs/2109.00410>

Partial smoothing of delay transition semigroups acting on special functions
Federica Masiero, Gianmario Tessitore

<http://arxiv.org/abs/2109.00671>

Matrix Orthogonal Polynomials, non-abelian Toda lattice and Bäcklund transformation
Shi-Hao Li

<http://arxiv.org/abs/2109.00772>

Hankel Determinants of Certain Sequences Of Bernoulli Polynomials: A Direct Proof of an Inverse Matrix Entry from Statistics
Lin Jiu, Ye Li

<http://arxiv.org/abs/2109.00790>

Tracy–Widom method for Janossy density and joint distribution of extremal eigenvalues of random matrices
Shinsuke M. Nishigaki

<http://arxiv.org/abs/2109.00990>

An MsFEM approach enriched using Legendre polynomials
Frederic Legoll, Pierre-Loik Rothe, Claude Le Bris, Ulrich Hetmaniuk

<http://arxiv.org/abs/2109.01477>

Mizuno-type result and Wallis' formula
Su Hu, Min-Soo Kim

<http://arxiv.org/abs/2109.01699>

Valeurs zêta multiples
Clément Dupont

<http://arxiv.org/abs/2109.01700>

New Analytical Expressions for the Levi-Civita Symbol and Its Treatment as a Generalized Function
W. Astar

<http://arxiv.org/abs/2109.01837>

On the Green function of the killed fractional Laplacian on the periodic domain
Thomas Simon

<http://arxiv.org/abs/2109.01886>

A well conditioned Method of Fundamental Solutions
Pedro R. S. Antunes

<http://arxiv.org/abs/2109.01909>

On certain identities involving Nahm-type sums with double poles
Shashank Kanade, Antun Milas, Matthew C. Russell

<http://arxiv.org/abs/2109.02073>

Integrability of one bilinear equation: singularity analysis and dimension
Sergei Sakovich

<http://arxiv.org/abs/2109.02075>

Nonintrusive model order reduction for cross-diffusion systems
Bulent Karasozen, Murat Uzunca, Gulden Mulayim

<http://arxiv.org/abs/2109.02494>

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The Bessel Line Ensemble

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On irrational values of the error function and gamma function
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On the differential transcendental of the Morita p -adic gamma function
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On the convolutions of sums of multiple zeta(–star) values of height one

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An Explanation of Mellin's 1921 Paper
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Urns & Tubes
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On the Distribution of large values of $|\zeta(\sigma + it)|$
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On the distribution of large values of $|\zeta(1 + it)|$
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New type series for powers of π
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On Large Values of $|\zeta(\sigma + it)|$

Zikang Dong, Bin Wei

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The Ratios conjecture for real Dirichlet characters and multiple Dirichlet series

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Extreme values of the Riemann zeta function at its critical points in the critical strip
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Dimension-free L^p estimates for vectors of Riesz transforms in the rational Dunkl setting
Agnieszka Hejna

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On a double integral of a product of Legendre polynomials
G. Vaman

Topic #7 ——— OP – SF Net 28.6 ——— November 15, 2021

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 e–mail to one of the OP–SF Editors
howard.cohl@nist.gov, or spost@hawaii.edu.

Contributions to OP–SF NET 29.1 should be sent by January 1, 2022.

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Topic #8 ——— OP – SF Net 28.6 ——— November 15, 2021

From: OP–SF Net Editors

Subject: Thought of the Month by **R. P. Agarwal**

“The corner stones of classical analysis are “elegance, simplicity, beauty and perfection.” Let them not be lost in your work. Any analytical generalization of a special function, only for the sake of a generalization by adding a few terms or parameters here and there, leads us nowhere”

Ratan Prakash Agarwal, in *Special Functions, Associated Differential Equations—Their Role, Applications and Importance* (pp. 1–9), *Special Functions and Differential Equations, Proceedings of the workshop (WSSF97) held in Madras, January 13–24, 1997*. Edited by K. Srinivasa Rao, R. Jagannathan, G. Vanden Berghe and J. Van der Jeugt, Allied Publishers Private Limited, New Delhi, 1998. pp. xvi+486, [MR1660044](#).

Contributed by Tom H. Koornwinder