

OP-SF NET – Volume 29, Number 3 – May 15, 2022

The Electronic News Net of the
SIAM Activity Group on Orthogonal Polynomials and Special Functions

<http://math.nist.gov/opsf>

OP-SF Net is distributed to OPSF Activity Group members and non-members alike through the OP-SF Talk listserv.

If you are interested in subscribing to the Newsletter and/or OP-SF Talk, or if you would like to submit a topic to the Newsletter or a contribution to OP-SF Talk, please send an email to the OP-SF Net Editors.

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2. Announcement: Article on the History of the Relativistic Schrödinger Equation
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5. Preprints in arXiv.org
6. Submitting contributions to OP-SF NET and SIAM-OPSF (OP-SF Talk)
7. Thought of the Month by **Vladimir Arnold**

Calendar of Events:

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>

May – November, 2022

Symmetries: Algebras and Physics

Thematic Semester, includes the following workshops:

May 23–June 10, 2022

Non-commutative algebras, representation theory and special functions

July 25–August 19, 2022

Graph theory, Algebraic combinatorics and mathematical physics

September 12–October 7, 2022

Integrable systems, exactly solvable models and algebras

Centre de Recherches Mathématiques, Montréal, Quebec, Canada
http://www.crm.umontreal.ca/2022/Symmetries22/index_e.php

June 13–17, 2022

OPSFA–16

Centre de Recherches Mathématiques, Montréal, Quebec, Canada
http://www.crm.umontreal.ca/2022/OPSFA22/index_e.php

July 3–8, 2022

Complex Analysis, Spectral Theory and Approximation meet in Linz
Johannes Kepler Universität, Linz, Austria

<https://www.jku.at/institut-fuer-analysis/konferenzen/complex-analysis/>

July 5–8, 2022

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 29.3 ——— May 15, 2022

From: Benjamin Eichinger (benjamin.eichinger@tuwien.ac.at)

Subject: Announcement: Complex Analysis, Spectral Theory and Approximation meet in Linz

Dear colleagues!

The conference “Complex Analysis, Spectral Theory and Approximation meet in Linz” aims to bring together experts in Complex Analysis, Spectral Theory and Approximation and provide a framework for scientific exchange related to those topics. The event, which was initially planned in 2020 and postponed due to the Covid pandemic will eventually take place in a hybrid format through Johannes Kepler Universität, Linz.

Conference dates: July 3–8, 2022

Conference homepage: [link](#).

Registration Deadline for on-site participation: June 15

The conference program consists of invited talks and a poster session.

The list of plenary speakers is:

- Alexander Aptekarev
- Roman Bessonov
- Jacob Christiansen
- David Damanik
- Sergey Denisov

- Iryna Egorova
- Alexandre Eremenko
- Jake Fillman
- Fritz Gesztesy
- Alexander Kheifets
- Aleksey Kostenko
- Stanislas Kupin
- Milivoje Lukic
- Barry Simon
- Mikhail Sodin
- Gerald Teschl
- Sergey Tikhonov
- Alexander Volberg
- Harald Woracek

Sincerely, Benjamin Eichinger

Topic #2 ——— OP – SF Net 29.3 ——— May 15, 2022

From: Sergei Suslov (sergei@asu.edu)

Subject: Announcement: Article on the History of the Relativistic Schrödinger Equation

Article:

Discovery of the Relativistic Schrödinger equation

by Kamal Barley, José Vega-Guzmán, Andreas Ruffing, and Sergei K. Suslov

Journal:

Physics–Uspekhi, IOP Publishing, January 2022, Volume 65, Number 1, Pages 90–103

Abstract:

We discuss the discovery of the relativistic wave equation for a spin-zero charged particle in the Coulomb field by Erwin Schrödinger (presumably during the Christmas holidays 1925–26). However, in this new approach, an essential discrepancy was found with the fine structure formula for the energy levels already obtained by Sommerfeld in the framework of the ‘old’ quantum mechanics. As a result, Schrödinger had to withdraw the original ‘relativistically framed’ article, a draft of which has never been found, from a journal and start all over with his centennial article on the nonrelativistic stationary Schrödinger equation. Our goal here is to follow the original ‘relativistic idea’ from a modern mathematical viewpoint and elaborate on why Schrödinger didn’t publish it. We hope that this consideration will encourage the readers to study quantum physics starting from one of the crucial moments of its creation.

Contents:

1. Introduction
2. Introducing the relativistic Schrödinger equation
3. Solving the relativistic Schrödinger equation
4. Further treatment: nonrelativistic approximation
5. Semiclassical approximation: Wentzel–Kramers–Brillouin method for Coulomb fields

6. Erwin Schrödinger – 60 years later
7. Appendices
 - Summary of Nikiforov–Uvarov method
 - Evaluation of the integral
 - Laplace method
 - Letter from Schrödinger to Weyl
8. Acknowledgments
9. References

Goal:

We hope that this consideration, despite potential imperfections, will encourage the readers to study quantum physics starting at one of the crucial moments of its creation and draw their own conclusions.

This article has appeared on the IOP website:

<https://iopscience.iop.org/journal/1063-7869>

and

<https://iopscience.iop.org/article/10.3367/UFNe.2021.06.039000>

in the history of physics series.

This article made it on the top of the most read list with a total 579 downloads after just four weeks online.

The History of Physics series had in the past great authors, such as P.A.M. Dirac:

<https://iopscience.iop.org/article/10.1070/PU1979v022n08ABEH005593>

and F.J. Dyson:

<https://iopscience.iop.org/article/10.3367/UFNe.0180.201008f.0859>

among others.

Topic #3 ——— OP – SF Net 29.3 ——— May 15, 2022

From: OP–SF Net Editors

Subject: Book Description for: *Theta functions, elliptic functions and π* (2020) by **Heng Huat Chan**

It may be of interest to some members of the OPSFA mailing list to know about the following recently published book:

“Theta functions, elliptic functions and π ”, in the [De Gruyter Textbook](#) series:

<https://doi.org/10.1515/9783110541915>.

Heng Huat Chan, Department of Mathematics, National University of Singapore, Singapore, Republic of Singapore

This book presents several results on elliptic functions and π , using Jacobi’s triple product identity as a tool to show surprising connections between different topics within number theory such as theta functions, Eisenstein series, the Dedekind delta function, and Ramanujan’s work on π . The included exercises make it ideal for both classroom use and self–study.

- A pedagogical presentation of elliptic functions, modular forms and Ramanujan’s work on π .
- Connects several parts of number theory through Jacobi’s triple product identity.
- Includes exercises, making it also suitable for self–study.

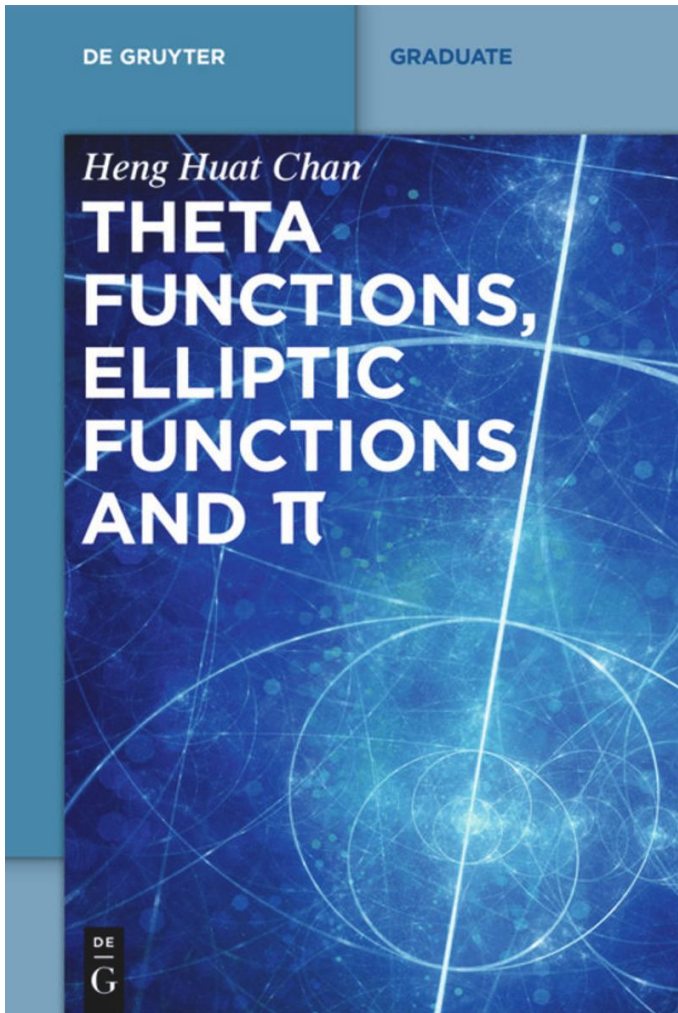


Figure 1: Book cover

elegant proof!” or “What an interesting problem!” (and, indeed, there are many challenging exercises). Read with enjoyment!

The following is the foreword written by **Bruce Berndt**, reprinted with permission.

When one peruses the offerings of mathematics book publishers, one finds a large variety of text books at the undergraduate level, and also at the advanced level for upper-level graduate students and researchers. However, few books are “in between.” Theta functions, elliptic functions and π falls “in between.” This book, focusing on certain classical topics related to number theory, provides a stepping stone to both the past and future. The topics are chosen both for their elegance and their usefulness. The ubiquitous theta functions play the leading role. They form relationships to elliptic functions, sums of squares, partitions, hypergeometric functions, q -series, and infinite series representations for $1/\pi$. This book is valuable, because some of its topics do not appear in any of the courses taught by large, major universities. But it is even more valuable because it is inspirational. As you read it, you will exclaim, “What a beautiful theorem!” or “What an

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If you are interested in purchasing the books, then navigate here:

<https://www.degruyter.com/document/doi/10.1515/9783110541915/html>

The following topic is dedicated to two the AMS [Mathematical Reviews](#) and [zbMATH Open](#) reviews for this book.

Topic #4 ——— OP – SF Net 29.3 ——— May 15, 2022

From: OP–SF Net Editors

Subject: Book Reviews for: *Theta functions, elliptic functions and π* (2020) by **Heng Huat Chan**

The following are reviews of the book *Theta functions, elliptic functions and π* (with a foreword by Bruce Berndt) by Heng Huat Chan, National University of Singapore, Singapore & National Changhua University of Education, Taiwan. It was published by De Gruyter, Berlin in 2020.

This book review by Daniele Ritelli was originally published by the [American Mathematical Society \(AMS\)](#) as the review [MR42028036](#) in [Mathematical Reviews/MathSciNet](#). It is reprinted here by permission of the AMS.

The main objective of this textbook is to provide an accessible introduction to the Theta functions, which constitute a fundamental chapter in the theory of elliptic functions and, more generally, of special functions, usually mastered by specialists in the field and this is evidenced by the fact that the reference texts in this field are starting from the classic and monumental manual of Whittaker and Watson's *A Course of Modern Analysis* of which it is worth mentioning the recent republication [[MR4286926](#)], *Pi and the AGM* of the Borwein brothers [[MR1641658](#)] and finally the monograph *Ramanujan's theta functions* [[MR3675178](#)] of Shaun Cooper are, inevitably, extremely specialized level. On the other hand, the author proposes to approach these topics, quote from the introduction, by bridging, preparing the reader by gradually introducing him to hypergeometric series, theta functions, elliptic functions and modular forms.

My opinion is that the aim of the text is fully successful, allowing the reader to appreciate the many identities presented in the text, starting with Ramanujan's famous series for $1/\pi$, and at the same time to continue his or her journey by approaching the aforementioned specialised texts.

This book review by Franz Lemmermeyer was originally published by [zbMATH Open](#) as the review [an:1458.11002](#) which is available under the [CC BY-SA 4.0 license](#).

This book covers contributions by Euler, Jacobi, Eisenstein, Gauss and Ramanujan: Euler's special case of the q -binomial theorem, Jacobi's triple product formula, Jacobi's theta functions, Jacobi elliptic functions, Eisenstein series, Ramanujan's series for $\frac{1}{\pi}$, and Gauss's theory of the arithmetic-geometric mean. The choice of topics is guided by the aim of making the book *J. M. Borwein and P. B. Borwein [Pi and the AGM. A study in analytic number theory and computational complexity. New York, NY: John Wiley (1987; [Zbl 0611.10001](#))]* accessible to students familiar with basic complex analysis. The present book is similar in spirit to M. D. Hirschhorn's equally charming [*The power of q . A personal journey. Cham: Springer (2017; [Zbl 1456.11001](#))] - I highly recommend both books.*

Topic #5 ——— OP – SF Net 29.3 ——— May 15, 2022

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 March and April 2022. This list has been separated into two categories.

OP-SF Net Subscriber E-Prints

<http://arxiv.org/abs/2203.00243>

Lattice paths, vector continued fractions, and resolvents of banded Hessenberg operators
Abey López-García, Vasiliy A. Prokhorov

<http://arxiv.org/abs/2203.00498>

Eigenfunctions of the van Diejen model generated by gauge and integral transformations
F. Atai, M. Noumi

<http://arxiv.org/abs/2203.01204>

Generalised symmetries and bases for Dunkl monogenics
Hendrik De Bie, Alexis Langlois-Rémillard, Roy Oste, Joris Van der Jeugt

<http://arxiv.org/abs/2203.01419>

Electrostatic partners and zeros of orthogonal and multiple orthogonal polynomials
Andrei Martínez-Finkelshtein, Ramón Orive, Joaquín Sánchez-Lara

<http://arxiv.org/abs/2203.01739>

Indefinite q -integrals from a method using q -Ricatti equations
G. E. Heragy, Z. S. I. Mansour, K. M. Oraby

<http://arxiv.org/abs/2203.02273>

The eigenvector-eigenvalue identity for the quaternion matrix with its algorithm and computer program
Yuchao He, Mengda Wu, Y-H. Xia

<http://arxiv.org/abs/2203.02675>

An alternate proof for a case of a Malmsten integral
Abdulhafeez A. Abdulsalam

<http://arxiv.org/abs/2203.03039>

Landau-Ginzburg mirror, quantum differential equations and q KZ difference equations for a partial flag variety
Vitaly Tarasov, Alexander Varchenko

<http://arxiv.org/abs/2203.03318>

Higher-order recurrence relations, Sobolev-type inner products and matrix factorizations
Carlos Hermoso, Edmundo J. Huertas, Alberto Lastra, Francisco Marcellán

<http://arxiv.org/abs/2203.03589>

Euler-Kronecker constants for cyclotomic fields
Letong Hong, Ken Ono, Shengtong Zhang

<http://arxiv.org/abs/2203.03777>

A class of Bernstein-type operators on the unit disk
Marlon J. Recarte, Misael E. Marriaga, Teresa E. Pérez

<http://arxiv.org/abs/2203.03855>

A new Approach to fully degenerate Bernoulli numbers and polynomials
Taekyun Kim, Dae San Kim

<http://arxiv.org/abs/2203.04966>

Linear-Time and Constant-Space Algorithms to compute Multi-Sequences that arise in Enumerative Combinatorics (and Elsewhere)

Shalosh B. Ekhad, Doron Zeilberger

<http://arxiv.org/abs/2203.05202>

Schmidt-type theorems for partitions with uncounted parts

George E. Andrews, William J. Keith

<http://arxiv.org/abs/2203.05631>

On the general family of third-order shape-invariant Hamiltonians related to generalized Hermite polynomials

Ian Marquette, Kevin Zelaya

<http://arxiv.org/abs/2203.06134>

Gegenbauer expansions and addition theorems for a binomial and logarithmic fundamental solution of the even-dimensional Euclidean polyharmonic equation

Howard S. Cohl, Jessie E. Hirtenstein, Jim Lawrence, Lisa Ritter

<http://arxiv.org/abs/2203.07132>

Szegő condition, scattering, and vibration of Krein strings

R. Bessonov, S. Denisov

<http://arxiv.org/abs/2203.07863>

An asymptotic approximation for the Riemann zeta function revisited

R. B. Paris

<http://arxiv.org/abs/2203.09421>

Point Source Equilibrium Problems with Connections to Weighted Quadrature Domains

Peter D. Dragnev, Alan R. Legg, Edward B. Saff

<http://arxiv.org/abs/2203.09426>

D-brane masses at special fibres of hypergeometric families of Calabi-Yau threefolds, modular forms, and periods

Kilian Bönisch, Albrecht Klemm, Emanuel Scheidegger, Don Zagier

<http://arxiv.org/abs/2203.10025>

Sharp estimates for the hypergeometric functions related to root systems of type A and of rank 1

Piotr Graczyk, Patrice Sawyer

<http://arxiv.org/abs/2203.10526>

Hankel Determinant and Orthogonal Polynomials for a Perturbed Gaussian Weight: from Finite n to Large n Asymptotics

Chao Min, Yang Chen

<http://arxiv.org/abs/2203.10955>

Chebyshev polynomials in the 16th century

Walter Van Assche

<http://arxiv.org/abs/2203.11348>

Openness of Regular Regimes of Complex Random Matrix Models

Marco Bertola, Pavel Bleher, Roozbeh Gharakhloo, Kenneth T-R McLaughlin, Alexander Tovbis

<http://arxiv.org/abs/2203.12475>

A universal lower bound for certain quadratic integrals of automorphic L -functions
Laurent Clozel, Peter Sarnak

<http://arxiv.org/abs/2203.13578>

Oscillatory banded Hessenberg matrices, multiple orthogonal polynomials and random walks
Amilcar Branquinho, Ana Foulquié–Moreno, Manuel Mañas

<http://arxiv.org/abs/2203.14344>

On generalizations of discrete and integral Cauchy–Bunyakovskii inequalities by the method of mean values. Some applications
S. M. Sitnik

<http://arxiv.org/abs/2203.14391>

Bailey pairs and strange identities
Jeremy Lovejoy

<http://arxiv.org/abs/2203.14605>

New orthogonality relations for super–Jack polynomials and an associated Lassalle–Nekrasov correspondence
Martin Hallnäs

<http://arxiv.org/abs/2203.14837>

Christoffel functions for multiple orthogonal polynomials
Grzegorz Świdorski, Walter Van Assche

<http://arxiv.org/abs/2203.15942>

Combinatorics of Triangular Partitions
François Bergeron, Mikhail Mazin

<http://arxiv.org/abs/2203.16016>

Global asymptotics of the sixth Painlevé equation in Okamoto’s space
Viktoria Heu, Nalini Joshi, Milena Radnović

<http://arxiv.org/abs/2203.16889>

Exactly solvable anharmonic oscillator, degenerate orthogonal polynomials and Painlevé II
Marco Bertola, Eduardo Chavez–Heredia, Tamara Grava

<http://arxiv.org/abs/2203.17231>

Progressive approximation of bound states by finite series of square–integrable functions
A. D. Alhaidari

<http://arxiv.org/abs/2204.00105>

Refinements of Beck–type partition identities
Tewodros Amdeberhan, George E. Andrews, Cristina Ballantine

<http://arxiv.org/abs/2204.00756>

A generalization of certain associated Bessel functions in connection with a group of shifts
J. Choi, I. A. Shilin

<http://arxiv.org/abs/2204.00962>

Telescoping continued fractions for the error term in Stirling’s formula
Gaurav Bhatnagar, Krishnan Rajkumar

<http://arxiv.org/abs/2204.01021>

Malmsten's integral and some related results: A different approach with Special functions
Abdulhafeez A. Abdulsalam

<http://arxiv.org/abs/2204.01045>

When does a hypergeometric function ${}_pF_q$ belong to the Laguerre-Pólya class LP^+ ?
Alan D. Sokal

<http://arxiv.org/abs/2204.02535>

Schmidt Type Partitions
Runqiao Li, Ae Ja Yee

<http://arxiv.org/abs/2204.04625>

Gap probability for the hard edge Pearcey process
Dan Dai, Shuai-Xia Xu, Lun Zhang

<http://arxiv.org/abs/2204.04706>

Moment sequences and difference equations
Paweł J. Szabłowski

<http://arxiv.org/abs/2204.05505>

Lattice paths and negatively indexed weight-dependent binomial coefficients
Josef Küstner, Michael J. Schlosser, Meesue Yoo

<http://arxiv.org/abs/2204.05647>

Combinatorial identities and hypergeometric series
Enno Diekema

<http://arxiv.org/abs/2204.05696>

Positive definite functions on a regular domain
Martin Buhmann, Yuan Xu

<http://arxiv.org/abs/2204.05801>

Generalized quadratic commutator algebras of PBW-type
Ian Marquette, Luke Yates, Peter Jarvis

<http://arxiv.org/abs/2204.06220>

Product Inequalities for Multivariate Gaussian, Gamma, and Positively Upper Orthant Dependent Distributions
Dominic Edelmann, Donald Richards, Thomas Royen

<http://arxiv.org/abs/2204.08228>

Human and automated approaches for finite trigonometric sums
Jean-Paul Allouche, Doron Zeilberger

<http://arxiv.org/abs/2204.09305>

Recent Advances in Asymptotic Analysis
R. Wong, Yu-Qiu Zhao

<http://arxiv.org/abs/2204.09306>

On the ν -zeros of the Bessel functions of purely imaginary order
R. B. Paris

<http://arxiv.org/abs/2204.09887>

Two General Series Identities Involving Modified Bessel Functions and a Class of Arithmetical Functions

Bruce C. Berndt, Atul Dixit, Rajat Gupta, Alexandru Zaharescu

<http://arxiv.org/abs/2204.09910>

Some remarks and conjectures about Hankel determinants of polynomials which are related to Motzkin paths

Johann Cigler

<http://arxiv.org/abs/2204.11242>

Parameter and q asymptotics of \mathcal{L}_q -norms of hypergeometric orthogonal polynomials

Nahual Sobrino, Jesús Sánchez-Dehesa

<http://arxiv.org/abs/2204.11528>

Multiple orthogonal polynomials, d -orthogonal polynomials, production matrices, and branched continued fractions

Alan D. Sokal

<http://arxiv.org/abs/2204.13278>

Sums of Distances on Graphs and Embeddings into Euclidean Space

Stefan Steinerberger

<http://arxiv.org/abs/2204.13729>

Quasi-polynomial representations of double affine Hecke algebras

Siddhartha Sahi, Jasper Stokman, Vidya Venkateswaran

<http://arxiv.org/abs/2204.14098>

Characterization of Orthogonal Polynomials on lattices

D. Mbouna, Juan F. Mañas-Mañas, Juan J. Moreno-Balcázar

Other Relevant OP-SF E-Prints

<http://arxiv.org/abs/2203.00009>

A geometrical point of view for branching problems for holomorphic discrete series of conformal Lie groups

Quentin Labriet

<http://arxiv.org/abs/2203.00207>

Generalized hypergeometric G -functions take linear independent values

Sinnou David, Noriko Hirata-Kohno, Makoto Kawashima

<http://arxiv.org/abs/2203.00223>

From boxes to polynomials: a story of generalisation

Gypsy Akhyar, Yifan Guo, Lihexuan Yuan

<http://arxiv.org/abs/2203.00248>

Extension of Irreducibility results on Generalised Laguerre Polynomials $L_n^{(-1-n-s)}(x)$

Saranya G. Nair, Tarlok Nath Shorey

<http://arxiv.org/abs/2203.00264>

On minima of difference of theta functions and application to hexagonal crystallization
Senping Luo, Juncheng Wei

<http://arxiv.org/abs/2203.00777>

Apéry-Type Series with Summation Indices of Mixed Parities and Colored Multiple Zeta Values, II
Ce Xu, Jianqiang Zhao

<http://arxiv.org/abs/2203.00856>

E-Polynomials of Generic $GL_n \times \langle \sigma \rangle$ -Character Varieties: Unbranched Case
Cheng Shu

<http://arxiv.org/abs/2203.02070>

Computing zeta functions of algebraic curves using Harvey's trace formula
Madeleine Kyng

<http://arxiv.org/abs/2203.02254>

A real variable calculus for planar orthogonal polynomials
Haakan Hedenmalm, Aron Wennman

<http://arxiv.org/abs/2203.02278>

Analytic expressions for some Mellin transforms with their application to prime counting function and interpolation formulas for the zeta function
Omprakash Atale

<http://arxiv.org/abs/2203.02509>

Double Exponential method for Riemann Zeta, Lerch and Dirichlet L -functions
Sandeep Tyagi

<http://arxiv.org/abs/2203.02647>

Rational solutions of Painlevé-II equation as Gram determinant
Liming Ling, Bing-Ying Lu, Xiaoen Zhang

<http://arxiv.org/abs/2203.02949>

Random walks on crystal lattices and multiple zeta functions
Takahiro Aoyama, Ryuya Namba

<http://arxiv.org/abs/2203.02973>

Mixed-norm of orthogonal projections and analytic interpolation on dimensions of measures
Bochen Liu

<http://arxiv.org/abs/2203.03052>

Cone Vertex Algebras, Mock Theta Functions, and Umbral Moonshine Modules
Miranda C. N. Cheng, Gabriele Sgroi

<http://arxiv.org/abs/2203.03242>

Product formulas for hypergeometric functions over finite fields
Noriyuki Otsubo, Takato Senoue

<http://arxiv.org/abs/2203.04126>

Some multivariable Rado numbers
Gang Yang, Yaping Mao, Changxiang He, Zhao Wang

<http://arxiv.org/abs/2203.04590>

Two conjectures for Macdonald polynomials: The stretching symmetry and Haglund's conjecture
Seung Jin Lee, Jaeseong Oh, Brendon Rhoades

<http://arxiv.org/abs/2203.04917>

Anosov Flows and Dynamical Zeta Functions (Errata)
Paolo Giulietti, Mark Pollicott, Carlangelo Liverani

<http://arxiv.org/abs/2203.05083>

Skew-invariant curves and the algebraic independence of Mahler functions
Alice Medvedev, Khoa Dang Nguyen, Thomas Scanlon

<http://arxiv.org/abs/2203.05302>

A Riemann–Hilbert approach to the modified Camassa–Holm equation with step-like boundary conditions

Iryna Karpenko, Dmitry Shepelsky, Gerald Teschl

<http://arxiv.org/abs/2203.05350>

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The eighth moment of the Riemann zeta function
Nathan Ng, Quanli Shen, Peng-Jie Wong

Topic #6 ——— OP – SF Net 29.3 ——— May 15, 2022

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 29.4 should be sent by July 1, 2022.

OP-SF NET is the electronic newsletter of the SIAM Activity Group on Special Functions and Orthogonal Polynomials (SIAG/OPSF). We disseminate your contributions on anything of interest to the special functions and orthogonal polynomials community. This includes announcements of conferences, forthcoming books, new software, electronic archives, research questions, and job openings as well as news about new appointments, promotions, research visitors, awards and prizes. OP-SF Net is transmitted periodically through a post to OP-SF Talk which is currently managed and

moderated by Howard Cohl (howard.cohl@nist.gov). Anyone wishing to be included in the mailing list (SIAG/OPSF members and non-members alike) should send an email expressing interest to him. Bonita Saunders also posts the Newsletter through SIAM Engage (SIAG/OPSF) which is received by all SIAG/OPSF members.

OP-SF Talk is a listserv associated with SIAG/OPSF which facilitates communication among members, non-members and friends of the Activity Group. To post an item to the listserv, send e-mail to howard.cohl@nist.gov.

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 (2020–2022) are:

Peter Alan Clarkson, Chair

Luc Vinet, Vice Chair

Andrei Martínez-Finkelshtein, Program Director

Teresa E. Pérez, Secretary and SIAM Engage (SIAG/OPSF) moderator

The appointed officers are:

Howard Cohl, OP-SF NET co-editor

Sarah Post, OP-SF NET co-editor

Bonita Saunders, Webmaster and SIAM Engage (SIAG/OPSF) moderator

Topic #7 ——— OP – SF Net 29.3 ——— May 15, 2022

From: OP-SF Net Editors

Subject: Thought of the Month by **Vladimir Arnold**

“Not even mentioning the relative character of initial axioms, one cannot forget about the inevitability of logical mistakes in long arguments (say, in the form of a computer breakdown caused by cosmic rays or quantum oscillations). Every working mathematician knows that if one does not control oneself (best of all by examples), then after some ten pages half of all the signs in formulae will be wrong and twos will find their way from denominators into numerators. ”

Vladimir Arnold (1937–2010), in *On teaching mathematics*, Uspekhi Mat. Nauk **53** (1998), no. 1, 229–234; English translation: Russian Math. Surveys **53** (1998), no. 1, 229–236.

Contributed by Daniel Lichtbau