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

http://math.nist.gov/opsf

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4. Preprints in arXiv.org
5. Submitting contributions to OP-SF NET and SIAM-OPSF (OP-SF Talk)
6. Thought of the Month by **David Hilbert**

Calendar of Events:

June 7–11, 2021
33rd International Colloquium on Group Theoretical Methods in Physics (Group33)
Cotonou, Benin
http://www.cipma.net/group33-cotonou-benin

June 20–26, 2021
8th European Congress of Mathematics (8ECM)
Mini-symposium on Orthogonal Polynomials and Special Functions
    Organized by Paco Marcellán, Juan J. Moreno-Balcázar and Galina Filipuk,
Portorož, Slovenia—**Now virtual due to coronavirus pandemic.**
https://www.8ecm.si/minisymposia

July 19–24, 2021
Mathematical Congress of the Americas (MCA 2021)
Special Session on *Special Functions and Orthogonal Polynomials*
    Organized by Diego Dominici, Luis E. Garza, Jan Felipe van Diejen
Buenos Aires, Argentina—**Now virtual due to coronavirus pandemic.**
http://www.mca2021.org/en

January 10–14, 2022—**Updated new date due to coronavirus pandemic.**
9th International Conference on Computational Methods and Function Theory (CMFT 2021)
Federico Santa María Technical University, Valparaíso, Chile
http://cmft2021.inf.utfsm.cl/

August 2022—**Updated new date due to coronavirus pandemic.**
OPSFA Summer School 2021
Radboud University, Nijmegen, The Netherlands
https://www.ru.nl/radboudsummerschool/courses/2021/opsfa-summer-school/

Summer 2022—**Tentative new date due to coronavirus pandemic.**
Functional Analysis, Approximation Theory and Numerical Analysis (FAATNA)
Matera, Italy
http://web.unibas.it/faatna20/

Summer, 2022—**Tentative new dates due to coronavirus pandemic.**
OPSFA-16
Centre de Recherches Mathématiques, Montreal, Canada

Topic #1 ——— OP – SF Net 28.2 ——— March 15, 2021

From: Claude Brezinski (claude.brezinski@univ-lille.fr)
Subject: Announcement: *Extrapolation and Rational Approximation* by **Brezinski** & **Redivo-Zaglia**

We would like to draw your attention to a new monograph *Extrapolation and Rational Approximation; The Works of the Main Contributors* by Claude Brezinski and Michela Redivo-Zaglia. The book is published by Springer Nature, Cham, Switzerland, 2020 ISBN 978-3-030-58417-7.

More information is available at the following link.

Description: This book paints a fresco of the field of extrapolation and rational approximation over the last several centuries to the present through the works of their primary contributors. It can serve as an introduction to the topics covered, including extrapolation methods, Padé approximation, orthogonal polynomials, continued fractions, Lanczos-type methods etc.; it also provides an in depth discussion of the many links between these subjects.

A highlight of this book is the presentation of the human side of the fields discussed via personal testimonies from contemporary researchers, their anecdotes, and their exclusive remembrances of some of the *actors*. This book shows how research in this domain started and evolved. Biographies of other scholars encountered have also been included. An important branch of mathematics is described in its historical context, opening the way to new developments. After a mathematical introduction, the book contains a precise description of the mathematical landscape of these fields spanning from the 19th century to the first part of the 20th . After an analysis of the works produced after that period (in particular those of Richardson, Aitken, Shanks, Wynn, and others), the most recent developments and applications are reviewed.

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Topic #2 ——— OP – SF Net 28.2 ——— March 15, 2021

From: Gaurav Bhatnagar (gaurav.bhatnagar@ashoka.edu.in), Atul Dixit (adixit@iitgn.ac.in) and
  Krishnan Rajkumar (krishnan.rjkmr@gmail.com)
Subject: Announcement: *Topics in Special Functions and Number Theory* seminar series

We would like to inform you about an online seminar on *Topics in Special Functions and Number Theory*. This is an online seminar co–organized by Gaurav Bhatnagar (Ashoka University), Atul Dixit (IIT, Gandhinagar) and Krishnan Rajkumar (Jawaharlal Nehru University). We meet approximately once every other week. The current timing is Thursdays from 4:00 – 5:00 PM (IST).

The first talk of the year is a Ramanujan Special. This year, this was given by Wadim Zudilin.

In case you wish to be informed of future talks, please drop a line to the organizers at: sfandnt@gmail.com.

Video recordings of most of the talks in the seminar are available on the website: https://sf–and–nt.blogspot.com. The following talks took place in the seminar and are available now for view. (There were more talks, but they were not recorded.)

1. Arvind Ayyer, IISc., Bangalore:
   The Monopole-Dimer Model

2. Gaurav Bhatnagar, Ashoka University:
   The Partition-Frequency Enumeration Matrix

3. Fatma Cicek, IIT, Gandhinagar:
   On the Logarithm of the Riemann Zeta-function Near the Nontrivial Zeros

4. Sneha Chaubey, IIIT, Delhi:
   Generalized Visible Subsets of Two Dimensional Integer Lattice

5. Atul Dixit, IIT, Gandhinagar:
   Superimposing theta Structure on a Generalized Modular Relation

6. Debashis Ghoshal, School of Physical Sciences, JNU:
   Two-dimensional Gauge Theories, Intersection Numbers and Special Functions

7. Apoorva Khare, IISc., Bangalore:
   An Introduction to Total Positivity; and, Totally Positive Matrices, Pólya Frequency Sequences, and Schur Polynomials

8. Josef Küstner, Vienna:
   Elliptic and q-analogs of the Fibonomial Numbers

9. Christian Krattenthaler, Vienna) (Scheduled for March 18, 2021:
   Determinant Identities for Moments of Orthogonal Polynomials

10. Rahul Kumar, IIT, Gandhinagar:
    A Generalized Modified Bessel Function and Explicit Transformations of Certain Lambert Series

11. Victor Moll, Tulane:
    Valuations of Interesting Sequences

12. Amritanshu Prasad, IMSc., Chennai:
    Character polynomials and their moments

13. Hjalmar Rosengren, Chalmers University of Technology and University of Gothenburg, Sweden:
    On the Kanade-Russell identities

14. Manjil P. Saikia, Cardiff University:
    Refined Enumeration of Symmetry Classes of Alternating Sign Matrices

15. Michael Schlosser, Vienna:
    Basic Hypergeometric Proofs of two Quadruple Equidistributions of Euler-Stirling Statistics on Ascent Sequences

16. Alok Shukla, Ahmedabad University:
    Tiling Proofs of Jacobi Triple Product and Rogers-Ramanujan Identities

17. Ali Uncu, Johann Radon Institute for Computational and Applied Mathematics (RICAM):
    The Mathematica Package q-Functions for q-series and Partition Theory Applications

18. Liuquan Wang, Wuhan University:
    Parity of Coefficients of Mock theta Functions

19. Wadim Zudilin, Radboud University, Nijmegen:
    10 Years of q-rious Positivity. More Needed

Topic #3 ———— OP – SF Net 28.2 ———— March 15, 2021

From: Walter Van Assche (walter.vanassche@kuleuven.be)
Subject: Announcement: *OPSFOTA* and *CAOPA* seminar series

An online bi–weekly seminar series on *Orthogonal Polynomials, Special Functions, Operator Theory and Applications* (OPSFOTA) is organized by Ana Loureiro, Walter Van Assche, Thomas Bothner, Jani Virtanen and Adri Olde Daalhuis. This seminar series is coordinated by the International Centre for Mathematical Sciences (ICMS, Edinburgh, UK). See https://www.icms.org.uk/events/event?id=1069 for more information. The online seminars are in zoom and run on Mondays, starting at 3pm (UK time). The upcoming seminars are:

- Monday March 15: **María Ángeles Garcia-Ferrero**, Universität Heidelberg, Germany, *Exceptional Legendre polynomials and confluent Darboux transformations*.

- Monday March 29: **Kerstin Jordaan**, University of South Africa, South Africa.

- Monday April 19: **Alan Sokal**, University College London and New York University, USA.

- Monday May 3: **Dan Dai**, City University of Hong Kong, China.

You can register to attend the seminars by completing the form at:
https://www.smartsurvey.co.uk/s/OPSFOTA/.

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A similar online seminar series entitled *Complex Approximation, Orthogonal Polynomials and Applications* (CAOPA) is run by Vladimir G. Lysov, Keldysh Institute of Applied Mathematics of Russian Academy of Sciences, Moscow, Russia. The topics of focus for the seminar series are: *rational approximations*, *orthogonal polynomials*, *spectral theory of difference operators*, *random matrices* and *special functions*. The seminar series is running on Mondays, twice every month. See link for more information and register at caopa2020@gmail.com to get the Zoom link.

Topic #4 ——— OP – SF Net 28.2 ——— March 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 January and February 2021. This list has been separated into two categories.

OP-SF Net Subscriber E-Prints

http://arxiv.org/abs/2101.00005
Mixed Neumann-Fourier expressions for solving integral equations
Raimundas Vidunas

http://arxiv.org/abs/2101.00525
The autoregressive filter problem for multivariable degree one symmetric polynomials
Jeffrey S. Geronimo, Hugo J. Woerdeman, Chung Y. Wong

http://arxiv.org/abs/2101.00978
New integral formulas and identities involving special numbers and functions derived from certain class of special combinatorial sums
Yilmaz Simsek

http://arxiv.org/abs/2101.01001
On the domains of Bessel operators
Jan Dereziński, Vladimir Georgescu

http://arxiv.org/abs/2101.01112
Congruences modulo powers of 5 for the rank parity function
Dandan Chen, Rong Chen, Frank Garvan

http://arxiv.org/abs/2101.01348
Complete and incomplete Bell polynomials associated with Lah-Bell numbers and polynomials
Taekyun Kim, Dae San Kim, Lee-Chae Jang, Hyunseok Lee, Han-Young Kim

http://arxiv.org/abs/2101.01589
Asymptotics of a Mathieu-Gaussian series
R. B. Paris

http://arxiv.org/abs/2101.01605
Colored Fermionic Vertex Models and Symmetric Functions
Amol Aggarwal, Alexei Borodin, Michael Wheeler

http://arxiv.org/abs/2101.01744
Asymptotics of Chebyshev rational functions with respect to subsets of the real line
Benjamin Eichinger, Milivoje Lukić, Giorgio Young

http://arxiv.org/abs/2101.01893
Generalized degenerate Bernoulli numbers and polynomials arising from Gauss hypergeometric function
Taekyun Kim, Dae san Kim, Lee-Chae Jang, Hyunseok Lee, Hanyoung Kim

http://arxiv.org/abs/2101.02187
A curious identity that implies Faber's conjecture
Elba Garcia-Failde, Don Zagier

http://arxiv.org/abs/2101.02339
Dyson's disordered linear chain from a random matrix theory viewpoint
Peter J. Forrester

http://arxiv.org/abs/2101.02902
Integral Representations of Rank Two False Theta Functions and Their Modularity Properties
Kathrin Bringmann, Jonas Kaszian, Antun Milas, Caner Nazaroglu

http://arxiv.org/abs/2101.03116
Legendre pairs of lengths $\ell \equiv 0$ (mod 3)
Ilias Kotsireas, Christoph Koutschan

http://arxiv.org/abs/2101.03432
Desingularising Transformations for Complex Differential Equations with Algebraic Singularities
Thomas Kecker, Galina Filipuk

http://arxiv.org/abs/2101.03557
Momenta spacing distributions in anharmonic oscillators and the higher order finite temperature Airy kernel
Thomas Bothner, Mattia Cafasso, Sofia Tarricone

http://arxiv.org/abs/2101.03629
A series representation of the discrete fractional Laplace operator of arbitrary order
Tiffany Frugé Jones, Evdokiya Georgieva Kostadinova, Joshua Lee Padgett, Qin Sheng

http://arxiv.org/abs/2101.03894
Why the Mittag-Leffler function can be considered the Queen function of the Fractional Calculus?
Francesco Mainardi

http://arxiv.org/abs/2101.04059
Fourier transforms of some special functions in terms of orthogonal polynomials on the simplex and continuous Hahn polynomials
Esra Güldoğan-Lekesiz, Rabia Aktaş, Iván Area

http://arxiv.org/abs/2101.04225
Hankel determinants of linear combinations of moments of orthogonal polynomials, II
Christian Krattenthaler

http://arxiv.org/abs/2101.04479
On the generalized hypergeometric function, Sobolev orthogonal polynomials and biorthogonal rational functions
Sergey M. Zagorodnyuk

http://arxiv.org/abs/2101.05311
Multiscale decompositions of Hardy spaces
Ronald R. Coifman, Jacques Peyrière

http://arxiv.org/abs/2101.06727
Variance of real zeros of random orthogonal polynomials
Doron S. Lubinsky, Igor E. Pritsker

http://arxiv.org/abs/2101.07384
On a polynomial congruence for Eulerian polynomials
Ira M. Gessel

http://arxiv.org/abs/2101.09557
Padé approximants on Riemann surfaces and KP tau functions
Marco Bertola

http://arxiv.org/abs/2101.09753
Some q-supercongruences modulo the square and cube of a cyclotomic polynomial
Victor J. W. Guo, Michael J. Schlosser

http://arxiv.org/abs/2101.09812
A note on fractional Askey-Wilson integrals
Jian Cao, Sama Arjika

http://arxiv.org/abs/2101.10147
There are EXACTLY 1493804444990933549162842901889480312298804695556 Ways to Derange a Standard Deck of Cards (ignoring suits)
Shalosh B. Ekhad, Christoph Koutschan, Doron Zeilberger

http://arxiv.org/abs/2101.11247
Bounds for an integral involving the modified Struve function of the first kind
Robert E. Gaunt

http://arxiv.org/abs/2101.11779
Generalizations of the Andrews-Yee identities associated with the mock theta functions $\omega(q)$ and $\nu(q)$
Bruce C. Berndt, Atul Dixit, Rajat Gupta

http://arxiv.org/abs/2101.11809
Integral Representations of Ultraspherical Polynomials II
N. H. Bingham, Tasmin L. Symons

http://arxiv.org/abs/2101.11963
On the computation of recurrence coefficients for univariate orthogonal polynomials
Zexin Liu, Akil Narayan

http://arxiv.org/abs/2101.11968
Reproducing kernel Hilbert spaces, polynomials and the classical moment problems
Holger Dette, Anatoly Zhigljavsky

http://arxiv.org/abs/2101.12165
Poncelet–Darboux, Kippenhahn, and Szegő: interactions between projective geometry, matrices and orthogonal polynomials
Markus Hunziker, Andrei Martinez-Finkelshtein, Taylor Poe, Brian Simanek

http://arxiv.org/abs/2101.12295
Spectral zeta–Functions and zeta–Regularized Functional Determinants for Regular Sturm–Liouville Operators
Guglielmo Fucci, Fritz Gesztesy, Klaus Kirsten, Jonathan Stanfill

http://arxiv.org/abs/2101.12313
Third–order ladder operators, generalized Okamoto and exceptional orthogonal polynomials
Véronique Hussin, Ian Marquette, Kevin Zelaya

http://arxiv.org/abs/2101.12592
Rational Hypergeometric Ramanujan Identities for $1/\pi^c$: Survey and Generalizations
Henri Cohen, Jesús Guillera

http://arxiv.org/abs/2101.12638
On foci of ellipses inscribed in cyclic polygons
Markus Hunziker, Andrei Martinez-Finkelshtein, Taylor Poe, Brian Simanek

http://arxiv.org/abs/2102.00033
On the functional equation for classical orthogonal polynomials on lattices
K. Castillo, D. Mbouna, J. Petronilho

http://arxiv.org/abs/2102.00560
Schubert polynomials and the inhomogeneous TASEP on a ring
Donghyun Kim, Lauren Williams

http://arxiv.org/abs/2102.00586
Absolutely Continuous Spectrum for CMV Matrices With Small Quasi–Periodic Verblunsky Coefficients
Long Li, David Damanik, Qi Zhou

http://arxiv.org/abs/2102.01613
Anti–palindromic compositions
George E. Andrews, Matthew Just, Greg Simay

http://arxiv.org/abs/2102.01779
An algebraic treatment of the Askey biorthogonal polynomials on the unit circle
Luc Vinet, Alexei Zhedanov

http://arxiv.org/abs/2102.01947
Infinite–dimensional groups over finite fields and Hall–Littlewood symmetric functions
Cesar Cuenca, Grigori Olshanski

http://arxiv.org/abs/2102.02360
Proof of two multivariate q–binomial sums arising in Gromov–Witten theory
C. Krattenthaler

http://arxiv.org/abs/2102.02663
Asymptotics of some integrals involving modified Bessel and hyper-Bessel functions
R. B. Paris

http://arxiv.org/abs/2102.03678
Strong asymptotic of Cauchy biorthogonal polynomials and orthogonal polynomials with varying measure
L. G. González Ricardo, G. López Lagomasino

http://arxiv.org/abs/2102.04157
Symbolic computation of hypergeometric type and non-holonomic power series
Bertrand Teguia Tabuguia, Wolfram Koepf

http://arxiv.org/abs/2102.04191
The Partition-Frequency Enumeration Matrix
Hartosh Singh Bal, Gaurav Bhatnagar

http://arxiv.org/abs/2102.04325
Prophet Inequality Matching Meets Probing with Commitment
Allan Borodin, Calum MacRury, Akash Rakheja

http://arxiv.org/abs/2102.04576
Statistical Enumeration of Groups by Double Cosets
Persi Diaconis, Mackenzie Simper

http://arxiv.org/abs/2102.06461
Unified Compact Numerical Quadrature Formulas for Hadamard Finite Parts of Singular Integrals of Periodic Functions
Avram Sidi

http://arxiv.org/abs/2102.06469
Exactness and Convergence Properties of Some Recent Numerical Quadrature Formulas for Supersingular Integrals of Periodic Functions
Avram Sidi

http://arxiv.org/abs/2102.07269
The combinatorics of Jeff Remmel
Sergey Kitaev, Anthony Mendes

http://arxiv.org/abs/2102.08815
A proof of the Extended Delta Conjecture
Jonah Blasiak, Mark Haiman, Jennifer Morse, Anna Pun, George H. Seelinger

http://arxiv.org/abs/2102.09201
The classical β-ensembles with β proportional to $1/N$: from loop equations to Dyson's disordered chain
Peter J. Forrester, Guido Mazzuca

http://arxiv.org/abs/2102.09502
On the Best Uniform Polynomial Approximation to the Checkmark Function
Peter D. Dragnev, Alan R. Legg, Ramon Orive

http://arxiv.org/abs/2102.09932
Variable-order fractional calculus: a change of perspective
Roberto Garrappa, Andrea Giusti, Francesco Mainardi

http://arxiv.org/abs/2102.10746
Joint Estimation of Multipath Angles and Delays for Millimeter-Wave Cylindrical Arrays with Hybrid Front-ends
Zhipeng Lin, Tiejun Lv, Wei Ni, J. Andrew Zhang, Jie Zeng, Ren Ping Liu

http://arxiv.org/abs/2102.11322
Nield-Kuznetsov functions and Laplace transforms of parabolic cylinder functions
T. M. Dunster

http://arxiv.org/abs/2102.11897
Balanced Derivatives, Identities, and Bounds for Trigonometric and Bessel Series
Bruce C. Berndt, Martino Fassina, Sun Kim, Alexandru Zaharescu

http://arxiv.org/abs/2102.12131
A short survey of duality in special functions
Tom H. Koornwinder

http://arxiv.org/abs/2102.12186
A Provably Componentwise Backward Stable $O(n^2)$ QR Algorithm for the Diagonalization of Colleague Matrices
Kirill Serkh, Vladimir Rokhlin

http://arxiv.org/abs/2102.12440
q-Analogues of π-Series by Applying Carlitz Inversions to q-Pfaff-Saalschütz Theorem
Xiaojing Chen, Wenchang Chu

Other Relevant OP-SF E-Prints

http://arxiv.org/abs/2101.00086
calculus: High Dimensional Numerical and Symbolic Calculus in R
Emanuele Guidotti

http://arxiv.org/abs/2101.00348
On the Automorphism Group of a Binary Form Associated with Algebraic Trigonometric Quantities
Anton Mosunov

http://arxiv.org/abs/2101.00548
Better understanding of the multivariate hypergeometric distribution with implications in design-based survey sampling
X. G. Duan

http://arxiv.org/abs/2101.00632
An asymptotic expansion of Selberg's central limit theorem near the critical line
Yoonbok Lee

http://arxiv.org/abs/2101.00831
Inversion of a Class of Singular Integral Operators on Entire Functions
Ridha Nasri, Alain Simonian, Fabrice Guillemin

http://arxiv.org/abs/2101.01049
Clebsh-Gordan coefficients for the algebra $\mathfrak{gl}_3$ and hypergeometric functions
Dmitry Artamonov

http://arxiv.org/abs/2101.01101
Lipschitz regularity for degenerate elliptic integrals with p,q-growth
Giovanni Cupini, Paolo Marcellini, Elvira Mascolo, A. Passarelli di Napoli

http://arxiv.org/abs/2101.01265
An identity concerning the Riemann-zeta function
Douglas Azevedo

http://arxiv.org/abs/2101.01291
On the definition of higher Gamma functions
Ricardo Pérez-Marco

http://arxiv.org/abs/2101.01451
Partition identities associated to Rogers-Ramanujan type identities
Pietro Mercuri

http://arxiv.org/abs/2101.01562
The stationary distribution of reflected Brownian motion in a wedge: differential properties
M. Bousquet-Mélou, A. Elvey Price, S. Franceschi, C. Hardouin, K. Raschel

http://arxiv.org/abs/2101.01655
Modified discrete Laguerre polynomials for efficient computation of exponentially bounded Matsubara sums
Guanpeng Xu, Steven G. Johnson

http://arxiv.org/abs/2101.01747
Extreme values of the argument of the Riemann zeta function
Alexander Dobner

http://arxiv.org/abs/2101.02094
Bernstein-Type Bounds for Beta Distribution
Maciej Skorski

http://arxiv.org/abs/2101.02269
Green's function for the fractional KdV equation on the periodic domain via Mittag-Leffler's function
Uyen Le, Dmitry E. Pelinovsky

http://arxiv.org/abs/2101.02462
Photon-added Barut-Girardello like coherent states of time-dependent Landau problem
Latévi Mohamed Lawson, Komi Sodoga, Gabriel Y. H. Avossevou

http://arxiv.org/abs/2101.02864
Isomonodromy sets of accessory parameters for Heun class equations
Jun Xia, Shuai-Xia Xu, Yu-Qiu Zhao

http://arxiv.org/abs/2101.03136
Asymptotic expansions for Bailey-type mock theta functions
Taylor Garnowski

http://arxiv.org/abs/2101.03338
Asymptotic absence of poles of Ihara zeta function of large Erdos-Renyi random graphs
O. Khorunzhiy

http://arxiv.org/abs/2101.03421
On Some Integral Representation Of $\zeta(n)$ Involving Nielsen's Generalized Polylogarithms And The Related Partition Problem
Xiaowei Wang

http://arxiv.org/abs/2101.04024
Degeneration of Riemann theta functions and of the Zhang-Kawazumi invariant with applications to a uniform Bogomolov conjecture
Robert Wilms

http://arxiv.org/abs/2101.04056
Weak Type Estimates for Square Functions of Dunkl Heat Flows
Huaiqian Li

http://arxiv.org/abs/2101.04067
Collatz Cycles and $3n + c$ Cycles
Darrell Cox, Sourangshu Ghosh, Eldar Sultanow

http://arxiv.org/abs/2101.04095
Pythagorean Harmonic Summability of Fourier Series
Nassar H. S. Haidar

http://arxiv.org/abs/2101.04147
Strong Asymptotics of Jacobi-Type Kissing Polynomials
Ahmad Barhoumi

http://arxiv.org/abs/2101.04277
Diameter and Ricci curvature estimates for long-time solutions of the Kahler-Ricci flow
Wangjian Jian, Jian Song

http://arxiv.org/abs/2101.04418
Correlations of sieve weights and distributions of zeros
Aled Walker

http://arxiv.org/abs/2101.04628
Intersection cohomology of rank two character varieties of surface groups
Mirko Mauri

http://arxiv.org/abs/2101.04654
On the growth and zeros of polynomials attached to arithmetic functions
Bernhard Heim, Markus Neuhauser

http://arxiv.org/abs/2101.04717
Asymptotic behaviour of the lattice Green function
Emmanuel Michta, Gordon Slade

http://arxiv.org/abs/2101.04865
A three-dimensional Laguerre one-way wave equation solver
Andrew V. Terekhov

http://arxiv.org/abs/2101.04991
Higher depth mock theta functions and q-hypergeometric series
Joshua Males, Andreas Mono, Larry Rolen

http://arxiv.org/abs/2101.05079
Stein's density method for multivariate continuous distributions
Guillaume Mijoule, Gesine Reinert, Yvik Swan

http://arxiv.org/abs/2101.05583
Mock Modular Forms with Integral Fourier Coefficients
Yingkun Li, Markus Schwagenscheidt

http://arxiv.org/abs/2101.05713
A note on the coefficients of power sums of arithmetic progressions
José L. Cereceda

http://arxiv.org/abs/2101.05715
Accessory parameters in confluent Heun equations and classical irregular conformal blocks
O. Lisovyy, A. Naidiuk

http://arxiv.org/abs/2101.06045
Geometric Properties of Generalized Bessel Function associated with the Exponential Function
Adiba Naz, Sumit Nagpal, V. Ravichandran

http://arxiv.org/abs/2101.06181
Equilibrium of Kirchhoff's rods subject to a distribution of magnetic couples
Marzio Lembo, Giuseppe Tomassetti

http://arxiv.org/abs/2101.06252
On the perturbative expansion of exact bi-local correlators in JT gravity
Luca Griguolo, Jacopo Papalini, Domenico Seminara

http://arxiv.org/abs/2101.06303
Hypergeometric Functions over Finite Fields and Modular Forms: A Survey and New Conjectures
Madeline Locus Dawsey, Dermot McCarthy

http://arxiv.org/abs/2101.06710
House of algebraic integers symmetric about the unit circle
Igor E. Pritsker

http://arxiv.org/abs/2101.06810
Classification of K-type formulas for the Heisenberg ultrahyperbolic operator $\square_s$ for $\widetilde{SL}(3, \mathbb{R})$ and tridiagonal determinants for local Heun functions
Toshihisa Kubo, Bent Ørsted

http://arxiv.org/abs/2101.06818
Approximating monomials using Chebyshev polynomials
Arvind K. Saibaba

http://arxiv.org/abs/2101.06851
Subregular J-rings of Coxeter systems via quiver path algebras
Ivan Dimitrov, Charles Paquette, David Wehlau, Tianyuan Xu

http://arxiv.org/abs/2101.07203
Universality of the minimum modulus for random trigonometric polynomials
Nicholas A. Cook, Hoi H. Nguyen

http://arxiv.org/abs/2101.07309
Asymptotic expansion of Fourier coefficients of reciprocals of Eisenstein series
Bernhard Heim, Markus Neuhauser

http://arxiv.org/abs/2101.07402
Dirichlet series for complex powers of the Riemann zeta function
Winston Alarcon-Athens

http://arxiv.org/abs/2101.07781
Minimax Off-Policy Evaluation for Multi-Armed Bandits
Cong Ma, Banghua Zhu, Jiantao Jiao, Martin J. Wainwright

http://arxiv.org/abs/2101.08036
Weighted value distributions of the Riemann zeta function on the critical line
Alessandro Fazzari

http://arxiv.org/abs/2101.08064
Interpolation by multivariate polynomials in convex domains
Jorge Antezana, Jordi Marzo, Joaquim Ortega-Cerdà

http://arxiv.org/abs/2101.08243
Cyclotomic expansions for $\mathfrak{gl}_N$ knot invariants via interpolation Macdonald polynomials
Anna Beliakova, Eugene Gorsky

http://arxiv.org/abs/2101.09558
The Gauss Hypergeometric Covariance Kernel for Modeling Second-Order Stationary Random Fields
in Euclidean Spaces: its Compact Support, Properties and Spectral Representation
Xavier Emery, Alfredo Alegría

http://arxiv.org/abs/2101.09846
Proof of the Ballantine-Merca Conjecture and theta function identities modulo 2
Letong Hong, Shengtong Zhang

http://arxiv.org/abs/2101.09897
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Riemann Hypothesis
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Bai-Ni Guo, Dongkyu Lim, Feng Qi

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Luciano Abadias, Edgardo Alvarez, Stiven Diaz

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S. I. Tertychniy

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Robert Reynolds, Allan Stauffer

Topic #5 ———— OP – SF Net 28.2 ———— March 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 28.3 should be sent by May 1, 2021.

OP-SF NET is an electronic newsletter 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, 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 SIAM‐OPSF (OP-SF Talk).

SIAM-OPSF (OP-SF Talk) is a listserv of the SIAM Activity Group on Special Functions and Orthogonal Polynomials, which facilitates communication among members, and friends of the Activity Group. See the previous Topic. To post an item to the listserv, send e-mail to siam-opsf@siam.org.

WWW home page of this Activity Group:
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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 OP-SF Talk moderator

The appointed officers are:
    Howard Cohl, OP-SF NET co-editor
    Sarah Post, OP-SF NET co-editor
    Diego Dominici, OP-SF Talk moderator
    Bonita Saunders, Webmaster and OP-SF Talk moderator

Topic #6 ——— OP – SF Net 28.2 ——— March 15, 2021

From: OP-SF Net Editors
Subject: Thought of the Month by **David Hilbert**

"The art of doing mathematics consists in finding that special case which contains all the germs of generality."

David Hilbert (1862-1943), quoted in *Mathematical Maxims and Minims*, by J. De Pillis and N. J. Rose, Rome Press, Raleigh, NC, 1988.