O P-S F N E T - Volume 32, Number 5 - September 15, 2025

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.

Editors:

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Topics:

Calendar of Events:

October 3–5, 2025

2025 AMS Fall Southeastern Sectional Meeting
Tulane University, New Orleans, LA
https://www.ams.org/meetings/sectional/2328_program.html

Special Session related to SIAG/OPSF:

October 3–4: **Special Session on Advances in Integration Methods**
Organizers: Kristina Vandusen (Southeastern Louisiana University)
and Zachary P. Bradshaw (Naval Surface Warfare Center, Panama City Division)

January 19–23, 2026

Biennial Meeting of Real Sociedad Matemática Española (RSME),
Universidad de Alicante, San Vicente del Raspeig, Spain
https://2026.bienalrsme.com

Special Session related to SIAG/OPSF:

January 19–20: **Special Session on Orthogonal Polynomials and Special Functions. Theory and Applications**
Organizers: Francisco Marcellán (Universidad Carlos III de Madrid)
and Juan José Moreno Balcázar (Universidad de Almería)

June 15–19, 2026

Orthogonal Polynomials, Special Functions and their Applications Summer School (OPSF-S11),
Universidad de Alcalá, Alcalá, Spain,
https://opsfa2026.web.uah.es

June 22–26, 2026

OPERA 2026 – Orthogonal Polynomials, Exponential analysis, Rational Approximation, with applications,
University of Stirling, Scotland, UK
https://www.opera2026.uk/

July 8–18, 2026

Foundations of Computational Mathematics (FoCM 2026), University of Vienna, Vienna, Austria
https://focm2026.univie.ac.at/

Workshop related to SIAG/OPSF:

July 9–11: **Special Functions and Orthogonal Polynomials**
Organizers: Daan Huybrechs (KU Leuven), Erik Koelink (Radboud Universiteit)
and Teresa Pérez (Universidad de Granada)

August 17–21, 2026

18th International Symposium on Orthogonal Polynomials, Special Functions and Applications
Muromachi Campus, Doshisha University, Kyoto, Japan
https://opsfa18.com/

From: Hiroshi Miki (hmiki@mail.doshisha.ac.jp)
and Satoshi Tsujimoto (tsujimoto.satoshi.5s@kyoto-u.ac.jp)
Subject: First Announcement: OPSFA-18

The 18th International Symposium on Orthogonal Polynomials, Special Functions and Applications (OPSFA-18)

Conference Dates: Monday afternoon, August 17 to Friday, August 21, 2026

Venue: Hardy Hall, Muromachi Campus, Doshisha University, Kyoto, Japan

OPSFA-18 will be held at Hardy Hall on the Muromachi Campus of Doshisha University, located in central Kyoto, behind the historic Kyoto Imperial Palace, from August 16, 2026 (arrival day) to August 22, 2026 (departure day). The campus is easily accessible—just a few minutes' walk from Imadegawa Station on the Karasuma Subway Line, with direct access from Kyoto Station in about 10 minutes.

Muromachi Campus, Doshisha University:
https://www.doshisha.ac.jp/en/information/imadegawa/muromachi_map/

Important Dates and Registration:

- Registration open December 1, 2025
  - Early bird registration deadline: May 31, 2026
  - Final deadline: July 15, 2026
- Submission for talk/poster open: February 1, 2026
  - Final deadline: May 15, 2026
- Financial support application deadline: April 15, 2026
  - Notification of financial support: May 1, 2026
- Registration and submission of talk/poster will be open at: https://opsfa18.com/
  Accompanying persons will not be required to pay the registration fee. However, a charge will apply if they wish to attend the banquet. An online registration system will be provided. Further details, including information on registration fees and submission guidelines, will be made available on the OPSFA-18 website.

Plenary Speakers:

- Gábor Szegő Prize Laureate (to be announced)
- Dan Dai (City University of Hong Kong, China)
- Jan Felipe van Diejen (University of Santiago, Chile)
- María Angeles García-Ferrero (ICMAT, Spain)
- Kohei Iwaki (the University of Tokyo, Japan)
- Rinat Kedem (Urbana-Champaign, USA)
- Greta Panova (University of Southern California, USA)
- Makiko Sasada (the University of Tokyo, Japan)
- Guilherme Silva (University of São Paulo, Brazil)
- Yasuhiko Yamada (Kobe University, Japan)

- Others (to be confirmed)

Thematic Sessions: The conference will feature several Thematic Sessions covering a wide range of topics in orthogonal polynomials, special functions, and their applications. Thematic sessions will be held in parallel, and all talks will be allotted 30 minutes (including discussions). A poster session will also be organized. The list below of Thematic Sessions is tentative and may be subject to further modifications.

- Painlevé and Integrable Systems
- Random Matrices and Probability
- Exact WKB Analysis and Related Topics (Topological Recursion, Conformal Blocks, Beta-Ensembles)
- Orthogonal Polynomials, Mathematical Physics, and Interacting Particle Systems
- Algebraic Combinatorics
- Combinatorics, q-Series, Partitions, and Number Theory
- Quantum Walks and Quantum Information
- Asymptotics of Orthogonal Polynomials and Special Functions
- Multiple Orthogonal Polynomials
- Matrix Orthogonal Polynomials
- Orthogonal Polynomials on the Unit Circle
- Exceptional Orthogonal Polynomials
- Multivariate Special Functions
- General Orthogonal Polynomials, Hypergeometric and Special Functions (including Mathieu, Lamé, Heun, etc.)
- Applications of Orthogonal Polynomials and Special Functions – Interdisciplinary Topics (including Numerical Analysis, Data Science, Machine Learning, etc.)

Each Thematic Session will have several coordinators, who will be responsible for inviting some speakers and deciding on the format of contributed talks. Poster presentations will be handled by the Organizing Committee, in close cooperation with the Thematic Session coordinators.

All contributed talks must be submitted with the authors' preferred Thematic Sessions specified in order of priority. Each participant will be allowed to give only one presentation at the conference (plenary, contributed talk, or poster).

Accommodation

We encourage participants to make their hotel reservations. Currently, Kyoto is experiencing a high volume of visitors, and booking accommodation is expected to become increasingly difficult. In particular, the night of August 16 coincides with Gozan no Okuribi, a traditional summer event in Kyoto, during which accommodations are likely to be in especially high demand. We strongly recommend that you book your accommodation as early as possible.

Please note that the conference is scheduled to begin in the afternoon on the first day. Therefore, staying in Osaka, Tokyo, or another city on the night of the 16th and traveling to Kyoto on the morning of the 17th is also a feasible option.

We have blocked a limited number of rooms for participants who may have difficulty securing accommodation. If you would like to make use of this option, please let us know.

Financial Support

Limited financial support, mainly for early career researchers and students giving presentations, will be available. The deadline for the application will be April 15 2026 and the result will be notified in May 1 2026.

- Early Career Researchers: Researchers within five years after obtaining their Ph.D degree, counted from April 1 2026.

Organizing Committee:

- Satoshi Tsujimoto (Chair, Kyoto University)
- Hiroshi Miki (Co-Chair, Doshisha University)
- Benoit Collins (Kyoto University)
- Kazuki Maeda (University of Fukuchiyama)
- Satoru Odake (Shinshu University)
- Yoshitsugu Takei (Doshisha University)
- Teruhisa Tsuda (Aoyama Gakuin University)
- Luc Vinet (Université de Montréal)

Scientific Committee:

- Jan de Gier (University of Melbourne)
- David Gómez-Ullate (IE University)
- Alexander Its (Indiana University)
- Erik Koelink (Radboud Universiteit)
- Ana Loureiro (University of Kent)
- Andrei Martínez-Finkelshtein (Baylor University, University of Almería)
- Hiroshi Miki (Doshisha University)
- Inés Pacharoni (FaMAF, Universidad Nacional de Córdoba)
- Pablo Roman (Universidad Nacional de Córdoba)
- Satoshi Tsujimoto (Kyoto University)
- Luc Vinet (Université de Montréal)

Steering Committee:

- Howard Cohl (Elected SIAG/OPSF member)
- Teresa Peréz (representative from OPSFA-17, Spain)
- Luc Vinet (representative from OPSFA-16, Canada)
- Ana F. Loureiro (representative from OPSFA-14, UK)

For further information, please see our OPSFA-18 website:
https://opsfa18.com/

For information on the OPSFA series see: https://wis.kuleuven.be/events/archive/OPSFA

From: Howard Cohl (howard.cohl@nist.gov, Arno Kuijlaars (arno.kuijlaars@kuleuven.be),
Peter Miller (millerpd@umich.edu), S. Ole Warnaar (o.warnaar@maths.uq.edu.au),
and Ae Ja Yee (yee@psu.edu)
Subject: Second announcement: 2026 Gábor Szegő Prize Nominations deadline is **October 15**

Dear members of the OPSF community,

We would like to emphasize that the nomination period for the SIAM 2026 Gábor Szegő Prize is about to close. The nomination period ends on October 15, 2025. We have heard that so far SIAM has received **two** nominations for the Gábor Szegő Prize. However, in order for the prize to be awarded, SIAM must receive at least **three** nominations. So we require at least one more nomination so that the nomination process can be concluded for the 2026 Gábor Szegő Prize.

The Gábor Szegő Prize, established in 2011, should be awarded at OPSFA-18 which will be held at Doshisha University, Kyoto, Japan on August 17-21, 2026. SIAG/OPSF awards the Gábor Szegő Prize to an early-career researcher for outstanding research contributions, as determined by the prize committee, in the area of orthogonal polynomials and special functions, as evidenced by publication in peer-reviewed journals. For details about the Prize, see the following SIAM website: link.

In order to be eligible for the 2026 Gábor Szegő Prize, the candidate must have received their Ph.D. no earlier than January 1, 2016. The prize committee can make exceptions, if in their opinion the candidate is at an equivalent stage in their career. The candidate's work must contain significant research contributions in the area of orthogonal polynomials and special functions. One key paper must be cited as evidencing the contributions, though a body of papers may be discussed in the nomination. The qualifying key paper must have been published in English in a peer-reviewed journal.

Required Materials:

- Letter of nomination signed by two current members of the SIAG/OPSF
- Candidate's CV
- Bibliographic citation for candidate's key contributing paper

If you think you know someone who would be a great fit for the 2026 Gábor Szegő Prize, nominations must be submitted through the SIAM website. Click on the button which says "Submit a Nomination". This will bring you to another page: "2026 SIAM Prizes and Awards". On this page, you should click on the button on the right-hand side: "**APPLY**". You will need to login with a SIAM ID and password (you will need a SIAM ID and password) to submit a nomination. Select "SIAM Account Single Sign On" from the log in option menu. You will be redirected to the SIAM Single Sign On screen and will need your SIAM credentials. If you do not have a SIAM account you can create one by visiting https://my.siam.org.

Creating a SIAM account is free and you do not need to be a member. If you already have an account and do not remember your password, you can reset it using the same link. So in summary, click "APPLY", login, and then you should submit your nomination.

If you have any questions about the nomination process, these questions should be directed to Amanda Winward, SIAM Prizes and Awards Coordinator, and emails to her should be sent to: prizeadmin@siam.org.

We are looking forward to reviewing your nominations!

Best regards, The Selection Committee,
Howard Cohl (NIST, Chair), Arno Kuijlaars (KU Leuven), Peter Miller (University of Michigan),
S. Ole Warnaar (University of Queensland), Ae Ja Yee (The Penn State University).

Topic #3 ——— OP – SF Net 32.5 ——— September 15, 2025

From: Mourad E. H. Ismail (mourad.eh.ismail@gmail.com) and Xiang-Sheng Wang (xswang@louisiana.edu)
Subject: Announcement: Weekly Fall Virtual Analysis Seminar by **Ismail** and **Wang**

The Analysis Seminar is organized by Mourad Ismail and scheduled by Xiang-Sheng Wang for the Fall 2025 semester. It is held virtually on Zoom every Friday from 11:00 AM to 12:00 PM (CDT).

The Zoom link is https://ullafayette.zoom.us/j/2022002220 (Meeting ID: 2022002220).

Information about past and upcoming seminars is available at:
https://math.louisiana.edu/research/seminars-colloquia/analysis-seminar.

If you would like to be added to the Analysis Seminar mailing list to receive weekly announcements, please contact Mourad Ismail (mourad.eh.ismail@gmail.com) or Xiang-Sheng Wang (xswang@louisiana.edu).

Topic #4 ——— OP – SF Net 32.5 ——— September 15, 2025

From: Evelyne Hubert (evelyne.hubert@inria.fr)
Subject: Announcement: FoCM 2026 in Vienna, Austria – July 8–18, 2026 by **Hubert**

FoCM 2026 in Vienna, Austria – July 8–18th

The next Foundations of Computational Mathematics (FoCM) conference will take place in Vienna, Austria, from July 8 to July 18, 2026, beginning with an evening reception on July 8th .

Website: https://focm2026.univie.ac.at

We warmly invite you to save the date and join us for what promises to be a vibrant and inspiring event.

The Vienna conference will mark the 11th edition of the FoCM conference series, which has been held every three years since 1995. Over the years, FoCM conferences have earned a reputation as a dynamic and congenial gathering that embraces a broad spectrum of developments in computational mathematics. Each edition has welcomed several hundred participants from diverse areas of mathematics that intersect with computation in the broadest sense.

Format and Structure: As in previous editions, mornings will feature plenary lectures, with two talks each day. Afternoons will be devoted to parallel thematic workshops. In 2026, there will be 21 workshops, divided across three periods of three days each. Each period will host seven parallel workshops, scheduled to allow participants to move easily between them. Participants are encouraged to attend the entire conference and explore talks across different areas.

Plenary Speakers. We are pleased to announce the following plenary speakers:

- Beatrice Acciaio (ETH Zurich, Switzerland)
- Jennifer Balakrishnan (Boston University, USA)
- Jérôme Bolte (Toulouse School of Economics, France)
- Maria Chudnovsky (Princeton University, USA)
- Charlotte Hardouin (Université de Toulouse, France)
- Arno Kuijlaars (KU Leuven, Belgium)
- Annika Lang (Chalmers University of Technology, Sweden)

- Antonio Lerario (SISSA, Italy)
- Lin Lin (University of California, Berkeley, USA)
- Klas Modin (University of Gothenburg, Sweden)
- Ilaria Perugia (University of Vienna, Austria)
- Zuowei Shen (National University of Singapore, Singapore)
- Euan Spence (University of Bath, UK)
- Gabriele Steidl (Technische Universität Berlin, Germany)
- Alex Townsend (Cornell University, USA)
- Uli Wagner (Institute of Science and Technology Austria)
- Lenka Zdeborová (EPFL, Switzerland)

Workshops. The planned workshops for FoCM 2026 are as follows:

July 9–11:

- Computational Geometry and Topology
- Computational Optimal Transport
- Foundations of Numerical PDEs
- Foundations of Data Science and Machine Learning
- Information-Based Complexity
- Real Number Complexity
- Special Functions and Orthogonal Polynomials

July 13–15:

- Approximation Theory & Computational Harmonic Analysis
- Computational Algebraic Geometry
- Computational Number Theory
- Geometric Integration and Computational Mechanics
- Inverse Problems
- Random Matrices
- Stochastic Computation

July 16–18:

- Continuous Optimization
- Computational Dynamics
- Graph Theory and Combinatorics
- Multiresolution and Adaptivity in Numerical PDEs
- Numerical Linear Algebra
- Quantum Information and Quantum Algorithms
- Symbolic Analysis

Each workshop will also feature a poster session, with submission details to be announced in due course.

We look forward to welcoming you in Vienna in 2026!

Radu Bot, Elena Celledoni, Evelyne Hubert.

Topic #5 ——— OP - SF Net 32.5 ——— September 15, 2025

From: Andrei Martínez-Finkelshtein (a_martinez-finkelshtein@baylor.edu)
Subject: Announcement: Postdoctoral Fellow at Baylor University by **Martínez-Finkelshtein**

Baylor University, Postdoctoral Fellow

The Department of Mathematics in the College of Arts & Sciences at Baylor University invites applications for a postdoctoral position to start August 1, 2026. Details for this position can be found at http://apply.interfolio.com/168613. Applications must be completed and received no later than **November 1, 2025**.

This position is on a renewable twelve-month contract potentially leading to a maximum appointment of three years. Special consideration will be given to applicants with interests aligned with areas of research in the Department of Mathematics that include algebra, analysis, applied/computational mathematics, bio-medical mathematics, data science, differential equations, mathematical logic, mathematical physics, numerical analysis, neural networks, representation theory, and topology, with potential interdisciplinary applications.

About Baylor University: Baylor University is located in Waco, Texas and is the oldest college in the state. It has a diverse student population of 21,000 and is recognized as one of the top universities in the nation, achieving R1 institution status by the Carnegie Classification in January 2022. Baylor also made it to the honor roll of "Great Colleges to Work For" from The Chronicle of Higher Education. It offers competitive salaries and benefits, allowing faculty and staff to live in one of the fastest- growing parts of the state. Baylor's new strategic plan, *Baylor in Deeds*, guides the University as it continues to fulfill its mission of educating men and women for worldwide leadership and service by integrating academic excellence and Christian commitment within a caring community.

Baylor University, a private not-for-profit university affiliated with the Baptist General Convention of Texas, is committed to compliance with all applicable anti-discrimination laws, including those regarding age, race, color, sex, national origin, military service, genetic information, and disability. Baylor complies with statutory Affirmative Action/Equal Opportunity requirements. Baylor's full official Notice of Non-Discrimination may be read at https://disclosures.web.baylor.edu/notice-non-discrimination

Topic #6 ——— OP - SF Net 32.5 ——— September 15, 2025

From: Kerstin Jordaan (jordakh@unisa.ac.za), Howard Cohl (howard.cohl@nist.gov)
and Tom Trogdon (trogdon@uw.edu)
Subject: Announcement: Consider Obtaining and Bestowing Free SIAM/SIAG student memberships!

Dear members of the OPSF community:

This OPSF Newsletter is sent to a substantially larger community of researchers and students interested in Orthogonal Polynomials, Special Functions and Applications than the formal registered membership of the SIAM Activity Group (SIAG) on Orthogonal Polynomials and Special Functions. We are writing to make our community aware of some simple routes available to obtain free SIAM student membership as well as free membership of up to two SIAGs for postgraduate students (and in some cases even undergraduate students).

Pathways to free SIAM student membership

- Join a SIAM Student Chapter at your university (more information below). Chapter members are eligible for a free SIAM student membership (sign up online once you're listed as a chapter member).

This route applies to both undergraduate and postgraduate students.

- Be nominated by a SIAM member. Any non-student SIAM member in good standing can nominate up to two students per year (undergraduate or postgraduate) for a complimentary membership.
- Attend a SIAM Academic Member institution. Graduate students at SIAM Academic Member institutions can join for free, renewable up to six years while you remain a student there.

Benefits of student membership

- Free membership in two SIAM Activity Groups (except Outreach membership, which includes one).
- Big discounts on conference fees (up to about 85%).
- Subscription to SIAM News.
- Access to SIAM Review (electronic for free student members).
- SIAM Book discounts.
- Eligibility for certain travel awards and prizes.

Checklist to get started

1. Look for a SIAM Student Chapter at your university; join it to activate the free membership path.
2. If you are a Master's/PhD student, check whether your institution is a SIAM Academic Member; if yes, register for the free postgraduate-student membership (renewable up to six years).
3. If neither applies, ask a SIAM member (advisor, collaborator) to nominate you for a complimentary student membership.
4. Otherwise, choose US$25 student (or US$15 Outreach membership if you reside in a listed outreach country).

Please contact us or SIAM if you have any questions.

The Elected Officials of SIAG/OPSF, Howard Cohl (Chair), Kerstin Jordaan (Program Director), and Tom Trogdon (Secretary)

How students can join SIAM and get free SIAG membership

Route	SIAG Memberships Included
Join a SIAM Student Chapter	Free student membership + **2 free SIAGs**
Attend a SIAM Academic Member institution	Free student membership + **2 free SIAGs**
Be nominated for free student membership (Any non-student SIAM member in good standing may nominate up to two students per year)	Free student membership + + **2 free SIAGs**
Paid student membership (US$25/year)	Paid student membership + **2 free SIAGs**
Outreach membership (US$15/year) (Outreach countries)	Paid membership + **1 free SIAG**

Topic #7 ——— OP - SF Net 32.5 ——— September 15, 2025

From: Kerstin Jordaan (jordakh@unisa.ac.za), Howard Cohl (howard.cohl@nist.gov)
and Tom Trogdon (trogdon@uw.edu)
Subject: Announcement: Consider Forming a SIAM student chapter at your university

A SIAM Student Chapter is essentially a student-run group at a university that is officially recognized by SIAM. It does not cost anything, is relatively straightforward to start, is eligible for funding from SIAM and is a very convenient vehicle for undergraduate and postgraduate students to connect. Student chapter members also obtain free SIAM and SIAG memberships. Here is a short summary of how one is established and maintained:

1. **Forming a Core Group**.
   You need at least five student members of SIAM who are willing to form the chapter. They can be undergraduate or graduate students, as well as one faculty advisor (who is a current SIAM member).

2. **Application to SIAM**.
   Students and the faculty advisor work together to submit an application to SIAM headquarters. The application typically includes:
   - A list of founding student members and their SIAM membership status.
   - The name and details of the faculty advisor.
   - A proposed set of chapter bylaws (SIAM provides a template).
   - A statement of purpose/activities (e.g., seminars, reading groups, outreach).

3. **SIAM Approval**.
   Once the application is submitted, SIAM reviews it and formally charters the student chapter. Approved chapters are listed on SIAM's website, and students in the chapter are then eligible for free SIAM membership.

4. **Benefits of Having a Chapter**.
   - Free SIAM membership as well as free membership of two SIAGs for all student members.
   - Financial support from SIAM (up to US$500 annually, plus potential travel funds for travel expenses at SIAM conferences).
   - Access to SIAM speakers and professional networks.
   - Recognition as part of an international network of SIAM chapters.
   - Opportunities to organize talks, workshops, reading groups, and outreach activities.

5. **Maintaining the Student Chapter**.
   Submit a brief annual activity report to SIAM. Keep a minimum of five members and one faculty advisor. Continue regular student-led activities.

Please contact us or SIAM if you have any questions.

The Elected Officials of SIAG/OPSF, Howard Cohl (Chair), Kerstin Jordaan (Program Director),
and Tom Trogdon (Secretary)

Topic #8 ——— OP - SF Net 32.5 ——— September 15, 2025

From: Doron Lubinsky (lubinsky@math.gatech.edu)
Subject: Report: 2025 Shanks Conference by **Lubinsky**

Report on the 2025 Shanks Conference

The 2025 Shanks Conference, held in honor of Ed Saff's 80th birthday, took place at Vanderbilt University in Nashville from May 19–22, 2025. It was a lively and well-attended event, featuring engaging talks and a variety of social gatherings. The scientific program included 10 plenary lectures and over 170 additional presentations, organized into 15 minisymposia and contributed talk sessions. With six parallel sessions offered throughout the week, participants had a wide array of topics to choose from—just take a look at the minisymposia titles listed below.

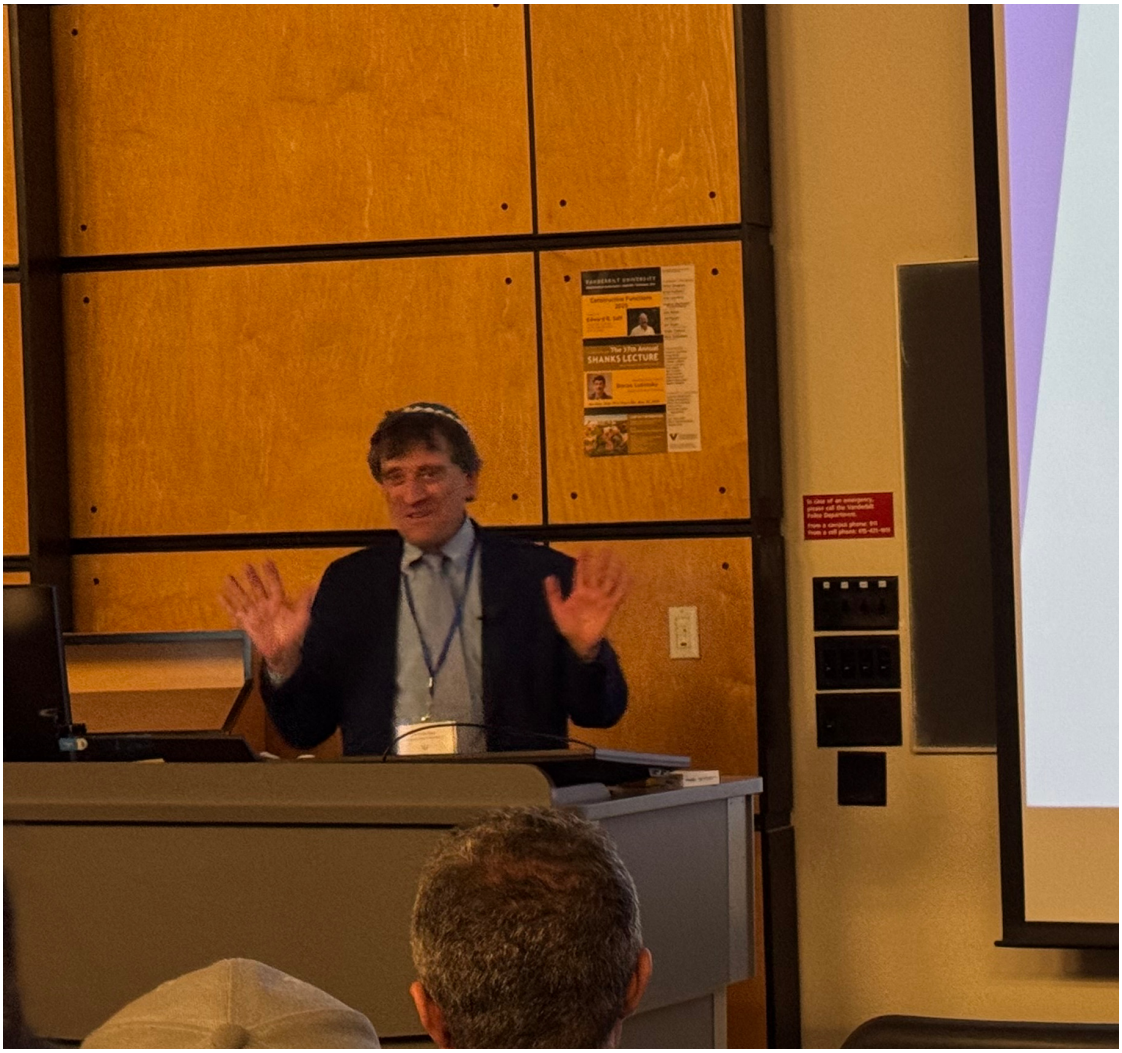

Figure 1: Professor Doron Lubinsky of Georgia Tech delivering the 2025 Shanks Lecture.

Special thanks were expressed to the local organizing committee—Doug Hardin, Liudmyla Kryvonos, Ryan Matzke, and their Vanderbilt team—for their dedicated efforts in delivering such a smoothly run conference. Financial support was generously provided by Springer Publishers, the Shanks Endowment, and the National Science Foundation.

The social events embraced Nashville's vibrant culture, featuring live country music, regional drinks, and local cuisine. The opening reception on Monday evening was held at Moxy's and drew a full crowd despite a storm outside. On Tuesday, the Shanks Reception took place in Wilson Hall, sponsored by Springer Nature, and once again offered great food, music—and another storm.

Wednesday's highlight was the conference banquet, hosted on the top floor of the Kimpton Aertson Hotel, which offered sweeping views of the city, plenty of country music, and even line dancing that lasted

Figure 2: Professor Igor Shevchuk presents the medal and academic regalia to Ed Saff for the honorary doctorate he received from Taras Shevchenko University, Kyiv, Ukraine.

late into the night. Ed Saff's family joined the celebration, along with many of his colleagues who shared heartfelt and humorous stories. William Kirwan spoke about the challenges of teaching a brilliant student like Ed in his complex analysis class, and Igor Shevchuk from the National University of Kyiv conferred an honorary doctorate on Ed to enthusiastic applause. The festivities concluded with a closing beer party at Wilson Hall on Thursday.

The conference was a fitting tribute to Ed Saff—honoring not only his 80th birthday but also his remarkable contributions to mathematics. These include his groundbreaking research papers, widely used monographs (the conference featured repeated references to the "bible," Logarithmic Potential Theory with External Fields), influential textbooks, the founding of the journal Constructive Approximation, his global collaborations, and his mentorship of countless students and young researchers. The event also celebrated the 40th anniversary of the founding of Constructive Approximation—another testament to Ed's enduring impact on the mathematical community.

The Plenary Talks and Titles

- Peter Dragnev (Purdue University – Fort Wayne)
  "My Journey Through Mathematics with Ed Saff"

- Arno Kuijlaars (KU Leuven)
  "Equilibrium Measures on a Riemann Surface and Random Tilings"
- Ana Loureiro (University of Kent)
  "A free journey from higher order recurrence relations to the zero distribution"
- Doron Lubinsky (Georgia Institute of Technology), Shanks Lecturer
  "A Selection of Ed's Saffires"
- Andrei Martínez-Finkelshtein (Baylor University)
  "The Many Facets of Iterated Differentiation"
- Ana Matos (Universite de Lille)
  "Solving an Equilibrium problem using Rational Approximation"
- Jill Pipher (Brown University)
  "Mathematical Ideas in Lattice Based Public Key Cryptography"
- Ian Sloan (University of New South Wales)
  "QMC designs – cubature on the sphere without polynomial exactness"
- Eitan Tadmor (University of Maryland)
  "Swarm-Based Gradient Descent Method for Non-Convex Optimization"
- Nick Trefethen (Harvard University)
  "AAA Approximation and Potential Theory"

The Minisymposia

- Inverse Source Problems and Approximations.
- Energy Minimization, Discrepancy, and Potential Theory.
- Spherical Codes and Designs.
- Not Only Polynomials: New Perspectives on Multivariate Approximation.
- Advances on Coulomb and Riesz Gases.
- Constructive Approximation and Equilibrium Problems – Related Topics and Applications.
- Applied and Computational Complex Analysis.
- Kernel Methods for Partial Differential Equations on Manifolds.
- Extremal Problems and Spectral Theory of Soliton Gases for Integrable Systems.
- Symmetric Subspace Configurations.
- Orthogonal Polynomials and Applications.
- Functions of a Complex Variable.
- Multivariate Splines and their Applications.
- Approximation Theory, PDE and Applications.
- Orthogonal Polynomials, Integrable Systems, and Riemann–Hilbert Problems.

From: OP-SF Net Editors
Subject: Reports from the SIAM AN25 (7/28/25-8/1/25), Montréal, Canada, SIAG/OPSF Minisymposia

Reports from the SIAG/OPSF Minisymposia at AN25, The Third annual meeting of SIAM and CAIMS which was held July 28-August 1, 2025, in Montréal, Canada

Below are nine reports of SIAM AN25 SIAG/OPSF Minisymposia by their organizers:

Peter Miller and **Giorgio Young**; **Edward Dunne** and **Howard Cohl**; **Amparo Gil** and **Javier Segura**; **Miguel Piñar** and **Teresa Pérez**; **Nicholas Crampé** and **Luc Vinet**; **Lin Jiu**; **Cade Ballew**, **Richard Slevinsky**, and **James Bremer**; **Maddie Dawsey** and **Fang-Ting Tu**; **Harmony Zhan** and **Anastasiia Minekova**.

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Orthogonal Polynomials and Special Functions in Modern Applications

Peter Miller (millerpd@umich.edu) and Giorgio Young (gfyoung@wisc.edu)

A minisymposium on the topic of "Orthogonal Polynomials and Special Functions in Modern Applications" was organized by Peter Miller (Michigan) and Giorgio Young (Michigan and Wisconsin) at the Third annual meeting of SIAM and CAIMS which was held July 28-August 1, 2025, in Montréal, Canada. This minisymposium featured talks highlighting the important role that classical special functions and more recent generalizations such as Painlevé transcendents play in modern applied mathematics. There were four speakers:

1. Tom Trogdon (Washington): "The ultraspherical rectangular collocation method and its convergence"
2. Giorgio Young (Michigan): "Rational solutions to the modified Korteweg-de Vries equation"
3. Jonathan Stanfill (Ohio State): "Utilizing special functions in the study of spectral zeta functions"
4. Bob Jenkins (Central Florida): "Extreme focusing events in the semiclassical scaled focusing NLS hierarchy"

The four talks displayed a nice mix of analysis of special functions (Trogdon and Stanfill) and applications to integrable PDE (Young and Jenkins). The talks were well attended although the session was scheduled for the very last time slot on the last day of the conference! Thanks to all for participating and promoting the research area! The photo below is from the post-minisymposium dinner.

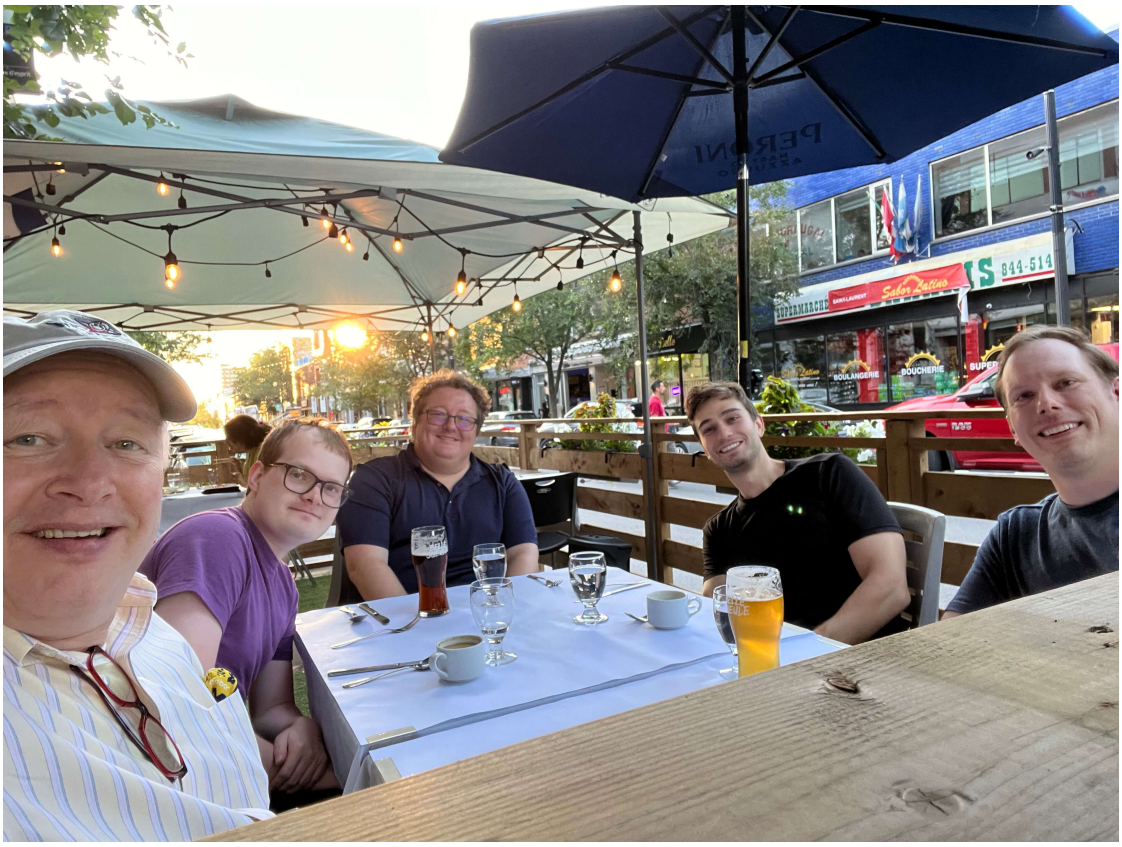

Figure 3: Left-to-right: Peter Miller, Cade Ballew, Bob Jenkins, Giorgio Young, and Jonathan Stanfill.

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Digital Mathematical Content on the Web

Edward Dunne (egd@ams.org) and Howard Cohl (howard.cohl@nist.gov)

The OPSF SIAM activity group sponsored a minisymposium at the 2025 joint meeting of SIAM and CAIMS in Montreal on the topic of Mathematical Content on the Web. The workshop took place on 31 July 2025 and addressed various approaches to the exponential growth of mathematical research, both in results and publications. Fortunately, more and more tools for digital mathematical content and for mathematical knowledge management are being developed to address this growth. Such tools need to provide excellent discoverability, through powerful search features, as well as suitable classification schemas and accurate author identification. Mathematics is also at a turning point for increased accessibility, as tools for "reading" mathematics on the web are improving. The minisymposium focused on existing and developing tools that provide solutions to these vital issues.

The speakers covered a broad range of topics, and came from a diverse set of organizations. There was a general theme of optimism that people, groups, and organizations were developing useful tools to manage the incredible growth of mathematical output. One sub-theme was the move to HTML for representing mathematics on the web, a medium with much greater potential for accessibility than PDF. Another theme was increased connectivity among mathematical sites on the web. Several speakers represented databases for mathematics of one form or another. Such databases help to wrangle either publications or mathematical results in ways useful to researchers. The use of the web for collaboration was also a theme represented in the minisymposium.

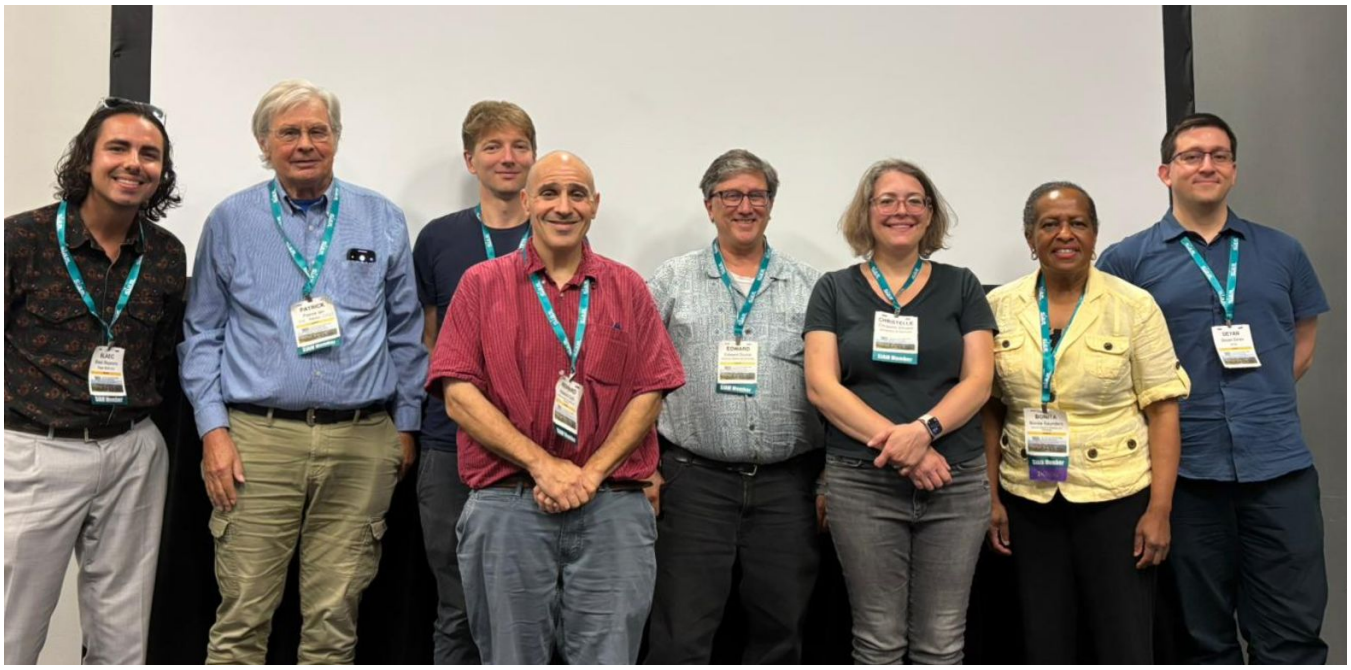

Figure 4: Left-to-right: Blaec Berjarno, Patrick Ion, Moritz Schubotz, Howard Cohl, Ed Dunne, Christelle Vincent, Bonita Saunders and Deyan Ginev.

The minisymposium was organized by Howard S. Cohl, National Institute of Standards and Technology, and Edward Dunne, Mathematical Reviews, American Mathematical Society.

Speakers and topics

Morning session

- Recent and Future Activities of the NIST Digital Library of Mathematical Functions Project,
  Howard S. Cohl, National Institute of Standards and Technology, U.S.A.
- Accessing Mathematics Using MathSciNet,
  Edward Dunne, American Mathematical Society, U.S.A.
- arXiv.org As HTML Papers – the Next 20.25%,
  Deyan Ginev, arXiv, U.S.A.
- Mathematical Research Data in zbMATH Open, Wikipedia, and Beyond,
  Moritz Schubotz, FIZ Karlsruhe – Leibniz Institute for Information Infrastructure, Germany

Afternoon session

- CoCalc for Course Management,
  Blaec A. Bejarano, CoCalc by SageMath, Inc., U.S.A.
- Trustworthy Mathematical Knowledge Management,
  Patrick Ion, University of Michigan, U.S.A. and International Mathematical Knowledge Trust; Stephen Watt, University of Western Ontario, Canada and International Mathematical Knowledge Trust
- Exploring Angle Ranks Using the LMFDB and a Brief Introduction to Code4Math,
  Christelle Vincent, University of Vermont, U.S.A.
- NIST DLMF Tables: Standard Reference Tables on Demand,
  Bonita V. Saunders, National Institute of Standards and Technology, U.S.A.

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Computation of Special Functions

Amparo Gil (amparo.gil@unican.es) and Javier Segura (javier.segura@unican.es)

Report by Amparo Gil on the SIAM AN25 MS "Computation of Special Functions"
Organizers: Amparo Gil, Javier Segura (U. Cantabria, Spain)
Date: Thursday, July 31, 2025

The session brought together talks in which the computation of special functions played a prominent role. Despite the early start, we had an audience that was alert enough to raise some very interesting questions.

In the first talk, I presented recent results (obtained in collaboration with Nico Temme and Javier Segura) on the computation and inversion of distribution functions. I focused particularly on one important aspect of this topic—closely related to the computation of special functions—namely, the development of efficient and accurate numerical algorithms.

The remaining three talks offered different yet complementary perspectives on modern computational techniques related to special functions and orthogonal polynomials. The first, by Rob Corless (Western University) on the computation of generalized Mathieu functions, revisited a classical problem in spectral theory, highlighting the difficulties that arise from double eigenvalues and the need to define new functions to ensure completeness of the basis. One name that came up during the talk—and that Rob emphasized we should remember—was Gertrude Blanch, a mathematician with an admirable and fascinating career (as you see, Rob, I took careful note).

The second talk, by Richard Slevinsky (University of Manitoba), introduced fast algorithms for measure modifications of orthogonal polynomials, exploiting displacement structures in Gram matrices to reduce the computational complexity of Cholesky factorizations from cubic to quadratic order, with particular efficiency in the Chebyshev case.

The final talk, by Wietse Waes (University of Washington), addressed the role of special functions in the numerical solution of initial-boundary value problems, especially in capturing short-time asymptotics via the Unified Transform Method and steepest descent techniques, ultimately leading to more robust time-stepping schemes for nonlinear and variable-coefficient PDEs. The talk was very well presented by Wietse Waes, a young PhD student.

Together, the four talks emphasized the continuing relevance of special functions in both theoretical and applied aspects of numerical analysis.

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Multivariate Approximation and Orthogonality

Miguel Piñar (mpinar@ugr.es) and Teresa Pérez (tperez@ugr.es)

A minisymposium on the topic "Multivariate Approximation and Orthogonality" was organized by Teresa E. Pérez (Universidad de Granada, Spain) at the Third Joint SIAM/CAIMS Annual Meetings (AN25) which was held on July 28–August 1, 2025, in Montréal, Canada.

The aim of this minisymposium was to provide a common ground for researchers working on multivariate approximation and orthogonality and related fields to report recent progress and exchange ideas. Talks addressed both theoretical advances and applications in Multivariate Approximation Theory, Numerical Analysis (cubature formulas, spectral methods for Boundary Value Problems, among others), Operator Theory, as well as some applications in Optics or Mathematical Physics.

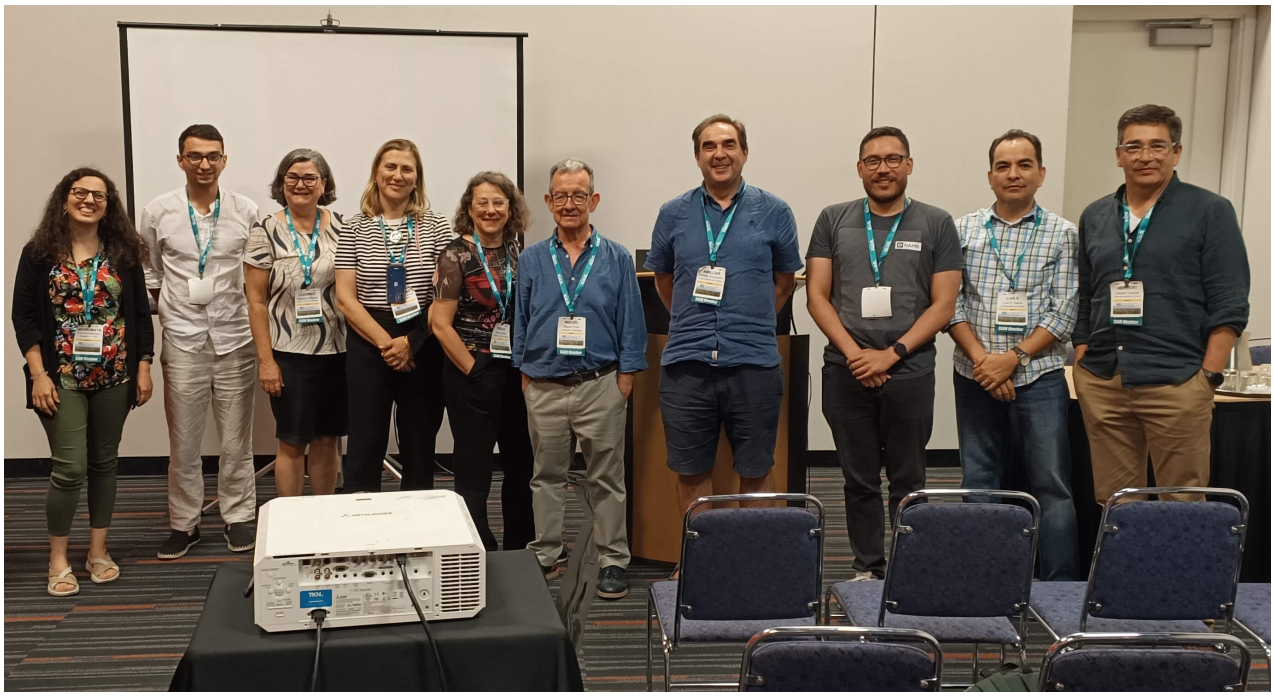

Figure 5: Left-to-right: Incoronata Notarangelo, Miguel Rojas, Cleonice F. Bracciali, Ana Foulquié-Moreno, Teresa E. Pérez, Miguel Piñar, Amilcar Branquinho, Misael E. Marriaga, Luis E. Garza, and Herbert Dueñas-Ruiz.

Speakers and topics

Part I: Afternoon, July 29

- Luis E. Garza, Universidad de Colima, México. *"On Symmetric Multivariate Orthogonal Polynomials"*.
- Herbert Dueñas-Ruiz, Universidad Nacional de Colombia, Colombia. *"Particular Cases of Sobolev-Type Zernike Orthogonal Polynomials"*.
- Ana Foulquié-Moreno, Universidade de Aveiro, Portugal. *"Applications of Quadratic Decomposition for Bivariate Orthogonal Polynomials"*.

Part II: Morning, July 30

- Amilcar Branquinho, Universidade de Coimbra, Portugal. *"Lax-Type Pairs in the Theory of Bivariate Orthogonal Polynomials"*.
- Misael E. Marriaga, Universidad Rey Juan Carlos, Spain. *"Higher-Order Differential Operators Having Bivariate Orthogonal Polynomials As Eigenfunctions"*.
- Cleonice F. Bracciali, São Paulo State University (UNESP), Brazil. *"Centrosymmetric and Reverse Matrices in Bivariate Orthogonal Polynomials"*.
- Miguel Rojas, Universidad Complutense de Madrid, Spain. *"Bivariate Multiple Orthogonal Polynomials of the Mixed Type"*.

Part III: Afternoon, July 30

- Incoronata Notarangelo, Università di Torino, Italy. *"Advances in Truncated Gaussian Quadrature Rules for Exponential Weights"*.

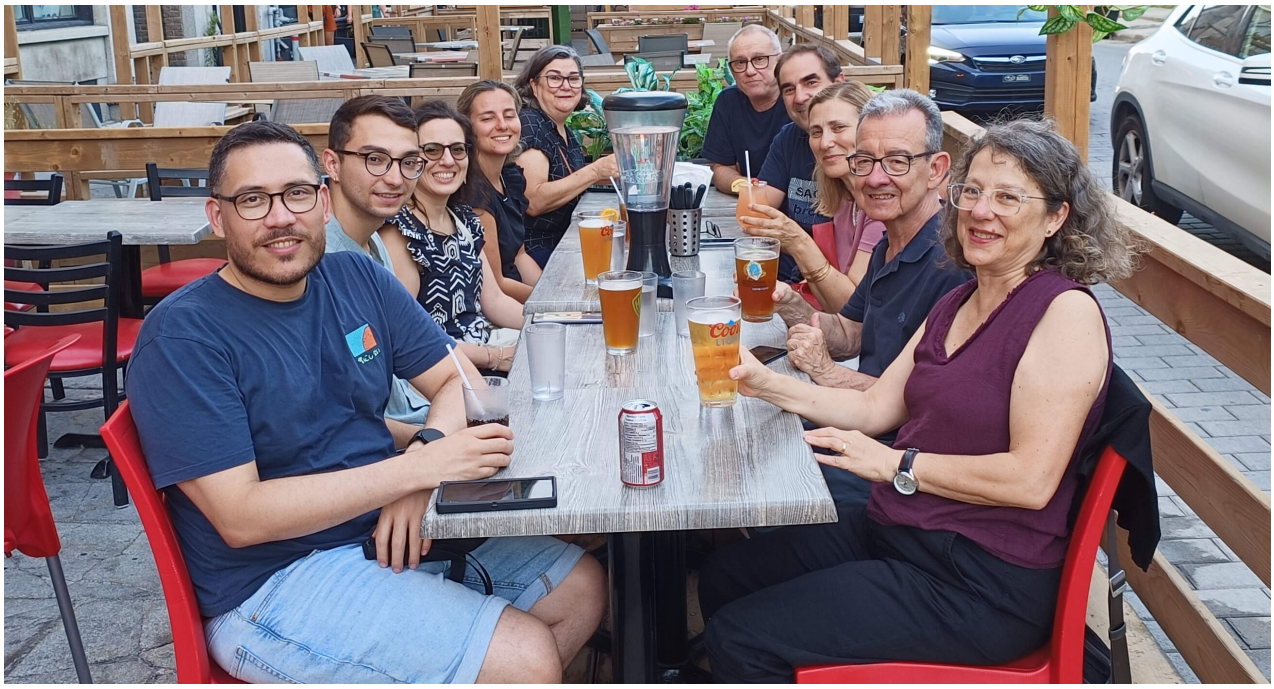

Figure 6: Dinner on Monday, July 28.

- Teresa E. Pérez, Universidad de Granada, Spain. *"Bivariate Bernstein-Jacobi Approximants for Negative Parameters"*.
- Miguel Piñar, Universidad de Granada, Spain. *"On Classical Generalized Bivariate Symmetric Polynomials"*.

The three sessions of the minisymposium took place in a relaxed and productive atmosphere, with notable attendance. This positive atmosphere fostered the camaraderie of the attendees that extended beyond the conference itself.

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Association scheme, orthogonal polynomials, and integrable systems

Nicolas Crampé (crampe1977@gmail.com) and Luc Vinet (luc.vinet@umontreal.ca)

A symposium on the topic of "Association scheme, orthogonal polynomials, and integrable systems" was organized at the SIAM Third annual meeting of SIAM and CAIMS which was held July 28–August 1, 2025, in Montréal, Canada.

Description: The interplay between association schemes, orthogonal polynomials, and integrable systems provides a rich area of research with connections to various fields of mathematics and physics. Indeed, association schemes are combinatorial structures that generalize the notion of a graph. They involve a set of vertices and a partition of the edges into classes, satisfying certain symmetry conditions. Association schemes, called P- and Q-polynomial schemes, are closely related to specific families of orthogonal polynomials, and properties of the orthogonal polynomials can be determined using combinatorial arguments. The study of integrable systems plays an important role in mathematical physics, and involves mathematical concepts such as the representation theory of quantum groups to compute analytically important physical quantities. Central objects in these different studies are some particular algebras appearing at different stages. The Terwilliger algebra has been introduced to study P- and Q-polynomial association schemes. Furthermore, they allow for a deeper understanding of the link with the

orthogonal polynomials and lead to the introduction of different concepts such as Leonard pairs, tridiagonal pairs, and tridiagonal algebras. Surprisingly, similar algebras appear to describe the centralizer for quantum groups, providing a connection with their representation theory and also with the Hamiltonians of certain quantum integrable systems. The relationships between these areas are complex and involve deep mathematical concepts, and numerous open problems remain to be solved. For example, the notion of bivariate P- and Q-polynomial association schemes has been defined, which leads to very intriguing questions about the underlying algebras and polynomials, as well as their use in integrable systems. The aim of this symposium was bring together researchers from these different communities to discuss recent advances and facilitate the interplays between them.

The relationships between combinatorial objects such as the association schemes, the special functions and certain physical models are complex, involve deep mathematical concepts with numerous open problems. The goal of this symposium was to gather specialists from these different topics. The speakers and talks were:

- Riley Casper (California State University) - *Discrete Bispectrality and Pascal's Matrix*
- Nicolas Crampé (CNRS, CRM) - *Bispectral Bivariate Polynomials*
- Quentin Labriet (CRM / U. de Montréal) - *Infinite dimensional representations of the meta Hahn algebra and special functions*
- Lucia Morey (CRM / U. de Montréal) - *Algebraic interpretation for discrete families of matrix-valued orthogonal polynomials*
- Sarah Post (University of Hawaï) - *Bivariate Racah Polynomials*
- Franco Saliola (CRM / Université du Québec à Montréal) - *Commutative Subalgebras of Symmetric Groups and Hecke Algebras Arising from Shuffling Processes*
- Jacek Szmigielski (University of Saskatchewan) - *Euler-Bernoulli Beam Problem & Non-commutative Stieltjes's Continued Fractions*
- Paul Terwilliger (University of Wisconsin-Madison) -*The nucleus of a Q-polynomial distance-regular graph*
- Felipe van Diejen (Instituto de Matemáticas, Universidad de Talca) - *The Spectrum of the Finite Open XX Quantum Spin Chain with Transverse Magnetic Boundary Fields via Orthogonal Polynomials*

The organizers of this symposium were Nicolas Crampé (CNRS, CRM) and Luc Vinet (IVADO, U. de Montréal).

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Special Functions with Applications in Number Theory and Combinatorics

Lin Jiu (lin.jiu.work@gmail.com)

The aim of the mini-symposium entitled *Special Functions with Applications in Number Theory and Combinatorics*, held at The Third Joint SIAM/CAIMS Annual Meetings, was to highlight some applications of special functions in number theory and combinatorics.

Special functions appear in various fields and take multiple forms, including series expansions, integral representations, differential or difference equations arising from certain models. Therefore, the variety of their applications naturally extends, among other fields, to physics, engineering, probability and statistics. In number theory and combinatorics, notable examples include, but are not limited to, gamma function, zeta functions, Dirichlet series and L-functions, integer partition functions, q-series, modular

forms, orthogonal polynomials, etc. Besides their computational and analytical properties such as convergence and asymptotic behavior, other key properties, such as algebraic structures and combinatorial and probabilistic interpretations, make these functions essential tools in related research. This mini-symposium will highlight some applications of special functions in number theory and combinatorics. Speakers will present either results on related special functions with examples of applications, or show the usage of special functions in studying the main objects under consideration.

Four talks were scheduled on July 31st, in the following order:

- Alexey Kuznetsov — Zeros of the Deformed Exponential Function abstract;
- Victor Moll — The Limiting Behavior of Zeros of a Family of Polynomials Coming from a Rational Integral;
- Nasser Saad — On Meixner–Pollaczek Polynomials and the Sturm–Liouville Problem;
- Karl Dilcher — Orthogonal Polynomials and Hankel Determinants for Certain Bernoulli and Euler Polynomials.

The organizational work for this mini-symposium was done by Lin Jiu, Duke Kunshan University, P. R. China.

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Numerical Methods in the Theory of OPSF

Cade Ballew (ballew@uw.edu), Richard Slevinsky (Richard.Slevinsky@umanitoba.ca),
and James Bremer (jamescbremerjr@gmail.com)

A minisymposium on the topic of *Numerical Methods in the Theory of Orthogonal Polynomials and Special Functions* was organized by Cade Ballew (Washington), Richard M. Slevinsky (Manitoba), and James Bremer (Toronto) at The Third Joint SIAM/CAIMS Annual Meetings in Montréal, QC July 28–August 1 2025. The session's goal was to highlight recent advances in computational approaches for and applications of orthogonal polynomials and special functions.

Despite its small size, the session showcased a wide variety of subject matter. The talks focused on two distinct themes: the applications of orthogonal polynomials and special functions to create new numerical methods (Ballew and Bremer), and the development of numerical methods for computing orthogonal polynomials and special functions (Chen and Hamm). There was also a healthy mix of topics from both the orthogonal polynomials side of the field (Ballew and Hamm) and the special functions side (Bremer and Chen).

The session consisted of the following 4 talks and speakers:

- James Bremer (Toronto): *Airy Phase Functions*
- Gabriel Hamm (Manitoba): *Fast Algorithms for Sobolev Orthogonal Polynomials*
- Shukui Chen (Toronto): *An Adaptive Delaminating Levin Method in Two Dimensions*
- Cade Ballew (Washington): *The Akhiezer Iteration for Matrix Functions and Sylvester Equations*

Despite the early morning time slot, the session was well-attended. Big thanks to everyone for participating!

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Hypergeometric Series and Their Applications

Maddie Dawsey (mdawsey@uttyler.edu) and Fang-Ting Tu (tu@math.lsu.edu)

Dawsey (UT Tyler) and Tu (LSU) organized a minisymposium on hypergeometric series at the Third Joint SIAM/CAIMS Annual Meetings which were held July 28–August 1, 2025 in Montréal, Canada. The presentations included in this minisymposium emphasized the varied applications of hypergeometric functions in several different fields, including the theory of automorphic forms, graph theory, and special sequences. There were nine talks arranged in three different sessions:

Session 1:

1. Ling Long (LSU): "Applications of Hypergeometric Functions to Modular Forms"
2. Maddie Dawsey (UT Tyler): "An Application of Hypergeometric Functions to Graph Theory"
3. David Roberts (Minnesota): "Hypergeometric Period Matrices"

Session 2:

4. Armin Straub (South Alabama): "Digital and Constant Term Representations of Sequences"
5. Lin Jiu (Duke Kunshan): "Hankel Determinants and Big q-Jacobi Polynomials for q-Euler Numbers"
6. Yifeng Huang (Southern California): "RR-Type Identities from Zeta Functions over Quadratic Orders"

Session 3:

7. Esme Rosen (LSU): "Hypergeometric Functions and Modular Forms"
8. Cameron Franc (McMaster): "On Densities of Bounded Prime for Hypergeometric Series"
9. Fang-Ting Tu (LSU): "Special L-values of Certain Modular Forms with Complex Multiplication and Hypergeometric Evaluations"

Several speakers presented results motivated by recent conjectures of Dawsey and McCarthy on hypergeometric function evaluations appearing in formulas for Fourier coefficients of modular forms, which were recapped by Dawsey in her talk. Long, Rosen, and Tu presented a newly developed and useful method called the Explicit Hypergeometric-Modularity Method for associating a modular form to given hypergeometric parameter values, and they detailed applications of this method to proving the Dawsey-McCarthy conjectures. Roberts gave a beautiful introduction to hypergeometric period matrices and their significance in number theory. Franc, Huang, Jiu, and Straub spoke about various applications of hypergeometric series in other number theoretic areas. The group of organizers and speakers was grateful for the opportunity to see old friends, make new friends, discuss interesting mathematics, and explore the beautiful city of Montréal.

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Spectral Graph Theory, Orthogonal Polynomials, and Quantum Computing

Harmony Zhan (hzhan@wpi.edu) and Anastasiia Minenkova (minenkova@hartford.edu)

A minisymposium on the topic of "Spectral Graph Theory, Orthogonal Polynomials, and Quantum Computing" was organized by Anastasiia Minenkova (University of Hartford) and Hanmeng Zhan (Worcester Polytechnic Institute) at the Third Joint SIAM/CAIMS annual meeting. Over the past three decades, quantum algorithms have matured into a vibrant field, with proven speedups over classical methods in key applications. This minisymposium brought together researchers in diverse areas of math—spectral graph theory, orthogonal polynomials, and numerical analysis—to showcase how these areas intersect and drive advances in quantum computing. Talks surveyed current frontiers in graph properties for quantum state transfer; orthogonal-polynomial methods in quantum information; quantum measurements; and nonlocal games. There were six speakers:

1. Rachel Bailey (Bentley University): "Orthogonal Polynomials and Perfect State Transfer"
2. Luc Vinet (Université de Montréal): "A Dynamical Algebra of Protocol-induced Transformations on Dicke States"
3. Vita Borovyk (University of Cincinnati): "Distance Measures for Quantum States and Channels: Properties and Applications"
4. Ada Chan (York University): "Multiple State Transfer "
5. Chris D. Godsil (University of Waterloo): "Spin and Quantum Automorphisms"
6. Hanmeng Zhan (Worcester Polytechnic Institute): "Simple Quantum Coins Enable Pretty Good State Transfer on Every Hypercube"

Topic #10 ——— OP - SF Net 32.5 ——— September 15, 2025

From: OP-SF Net Editors
Subject: Preprints in arXiv.org

The following preprints related to the fields of orthogonal polynomials and special functions were posted or cross-listed to one of the subcategories of arXiv.org during July and August 2025. This list has been separated into two categories.

OP-SF Net Subscriber E-Prints

http://arxiv.org/abs/2507.00433
https://doi.org/10.3842/SIGMA.2025.049
The Rogers-Ramanujan Identities and Cauchy's Identity
Dennis Stanton

http://arxiv.org/abs/2507.01253
Soliton Synchronization with Randomness: Rogue Waves and Universality
Manuela Girotti, Tamara Grava, Robert Jenkins, Guido Mazzuca, Ken McLaughlin, Maxim Yattselev

http://arxiv.org/abs/2507.01499
A q-analogue of Gosper's strange evaluation of the hypergeometric series
Yuka Yamaguchi

http://arxiv.org/abs/2507.02251
A generalized Birman-Schwinger principle and applications to one-dimensional Schrödinger operators with distributional potentials
Fritz Gesztesy, Roger Nichols

http://arxiv.org/abs/2507.02889
On the Laplace transforms of derivatives of special functions with respect to parameters
Sergei Rogosin, Filippo Giraldi, Francesco Mainardi

http://arxiv.org/abs/2507.03551
Some two-parameter families of generalized Bernstein functions
Stamatis Koumandos, Henrik L. Pedersen

http://arxiv.org/abs/2507.03824
Antiquantum q-series and mock theta functions
Amanda Folsom, David Metacarpa

http://arxiv.org/abs/2507.03862
Eigenvalue equations for sieved polynomials or proving Askey right again
Luc Vinet, Alexei Zhedanov

http://arxiv.org/abs/2507.04313
http://doi.org/10.3842/SIGMA.2025.051
Factorization of Basic Hypergeometric Series
Jonathan G. Bradley-Thrush

http://arxiv.org/abs/2507.07823
A fast algorithm for the wave equation using time-windowed Fourier projection
Nour G. Al Hassanieh, Alex H. Barnett, Leslie Greengard

http://arxiv.org/abs/2507.08059
The relative importance of being Gaussian
F. Alberto Grünbaum, Tondgi Xu

http://arxiv.org/abs/2507.09276
Certain positive q-series and inequalities for two-color partitions
George E. Andrews, Mohamed El Bachraoui

http://arxiv.org/abs/2507.09405
Lattice paths and the Geode
Ira M. Gessel

http://arxiv.org/abs/2507.11648
On computation of capacities
Mohamed M. S. Nasser, Matti Vuorinen

http://arxiv.org/abs/2507.12352
Quasimodular forms arising from Jacobi's theta function and special symmetric polynomials
Tewodros Amdeberhan, Leonid G. Fel, Ken Ono

http://arxiv.org/abs/2507.13483
Quantum algebra approach to univariate and multivariate rational functions of q-Racah type
Wolter Groenevelt, Carel Wagenaar

http://arxiv.org/abs/2507.13504
Correlations of error terms for weighted prime counting functions
Shubhrajit Bhattacharya, Greg Martin, Reginald M. Simpson

http://arxiv.org/abs/2507.13583
http://doi.org/10.1016/j.jmaa.2025.129794
On the Meixner–Pollaczek polynomials and the Sturm–Liouville problems
Mourad E. H. Ismail, Nasser Saad

http://arxiv.org/abs/2507.14734
Basis partitions and their signature
Krishnaswami Alladi

http://arxiv.org/abs/2507.15488
Optimal polynomial approximants and orthogonal polynomials on the unit circle. An electrostatic approach
Ramón Orive, Joaquín Sánchez-Lara, Daniel Seco

http://arxiv.org/abs/2507.16769
Overpartitions with parts separated by parity
Kathrin Bringmann, Catherine Cossaboom, William Craig

http://arxiv.org/abs/2507.16973
On the Bessel function and n-dimensional Hankel transform with Bicomplex arguments and coherent states
Snehasis Bera, Sourav Das, Abhijit Banerjee

http://arxiv.org/abs/2507.17694
Bivariate multiple orthogonal polynomials of mixed type on the step-line
Manuel Mañas, Miguel Rojas, Jianwen Wu

http://arxiv.org/abs/2507.18959
Higher-order Stirling cycle and subset triangles: Total positivity, continued fractions and real-rootedness
Bishal Deb, Alan D. Sokal

http://arxiv.org/abs/2507.19400
Raising and lowering maps for tridiagonal pairs
Paul Terwilliger

http://arxiv.org/abs/2507.19656
Elliptic orthogonal polynomials and OPRL
Victor Alves, Andrei Martínez-Finkelshtein

http://arxiv.org/abs/2507.20167
Degenerate Sheffer-type polynomials and degenerate Sheffer polynomials associated with a random variable
Taekyun Kim, Dae San Kim

http://arxiv.org/abs/2507.20298
Identical Vanishing of Coefficients in the Series Expansion of Eta Quotients, modulo 4, 9 and 25
Tim Huber, James Mc Laughlin, Dongxi Ye

http://arxiv.org/abs/2507.20646
On recurrence coefficients of classical orthogonal polynomials
K. Castillo, G. Gordillo-Núñez

http://arxiv.org/abs/2507.21966
Coh zeta functions for inert quadratic orders
Yifeng Huang

http://arxiv.org/abs/2507.22425
Zeros of linear combinations of Laguerre polynomials
Antonio J. Durán

http://arxiv.org/abs/2508.00070
Infinite-order rogue waves that are small (but not small in L^2)
Deniz Bilman, Peter D. Miller

http://arxiv.org/abs/2508.01132
Almost Periodic Solutions of The Cubic Defocusing Nonlinear Schrödinger Equation
Jake Fillman, Long Li, Milivoje Lukić, Qi Zhou

http://arxiv.org/abs/2508.01456
Singular values of sparse random rectangular matrices: Emergence of outliers at criticality
Ioana Dumitriu, Hai-Xiao Wang, Zhichao Wang, Yizhe Zhu

http://arxiv.org/abs/2508.02489
Superpolynomial convergence in the Riemann Rearrangement Theorem
Stefan Steinerberger

http://arxiv.org/abs/2508.04139
Asymptotics of the real eigenvalue distribution for the real spherical ensemble
Peter J. Forrester

http://arxiv.org/abs/2508.04365
Some identities of the sums-of-tails type
Atul Dixit, Gaurav Kumar, Aviral Srivastava

http://arxiv.org/abs/2508.04520
Error bounds for the asymptotic expansions of the Jacobi polynomials
Xiao-Min Huang, Yu Lin, Xiang-Sheng Wang, R. Wong

http://arxiv.org/abs/2508.04661
The generalized Chebotarev problem in higher genus
Marco Bertola

http://arxiv.org/abs/2508.04751
A bivariate version of the spread polynomials
Johann Cigler

http://arxiv.org/abs/2508.04908
Asymptotics of matrix orthogonal polynomials on the real line
Alfredo Deaño, Pablo Román

http://arxiv.org/abs/2508.05872
Uniform asymptotic expansions for generalised trigonometric integrals and their zeros
T. M. Dunster

http://arxiv.org/abs/2508.05901
Estimating the size of a set using cascading exclusion
Sourav Chatterjee, Persi Diaconis, Susan Holmes

http://arxiv.org/abs/2508.05924
On the spectral theory in the Fock space with polynomial eigenfunctions
A. V. Turbiner, N. L. Vasilevski

http://arxiv.org/abs/2508.05965
Basic hypergeometric identities derived from three-term relations
Yuka Yamaguchi

http://arxiv.org/abs/2508.07036
Nonconforming approximation methods for function reconstruction on general polygonal meshes via orthogonal polynomials
Francesco Dell'Accio, Allal Guessab, Gradimir V. Milovanović, Federico Nudo

http://arxiv.org/abs/2508.07047
A novel interpolation-regression approach for function approximation on the disk and its application to cubature formulas
Francesco Dell'Accio, Francisco Marcellán, Federico Nudo

http://arxiv.org/abs/2508.07245
Stein's method for asymmetric Laplace approximation
Fraser Daly, Robert E. Gaunt, Heather L. Sutcliffe

http://arxiv.org/abs/2508.08085
Integral representation for a product of two Jacobi functions of the second kind
Howard S. Cohl, Loyal Durand

http://arxiv.org/abs/2508.08162
Terminating representations, transformations and summations for the q and q^{-1}-symmetric subfamilies of the Askey-Wilson polynomials
Howard S. Cohl, Roberto S. Costas-Santos, Linus Ge

http://arxiv.org/abs/2508.08449
http://doi.org/10.1007/978-3-030-75425-9_18
Weighted Chebyshev Polynomials on Compact Subsets of the Complex Plane
Galen Novello, Klaus Schiefermayr, Maxim Zinchenko

http://arxiv.org/abs/2508.08908
Bilateral q-ultraspherical functions
Michael J. Schlosser

http://arxiv.org/abs/2508.09608
The partition function and elliptic curves
Ken Ono

http://arxiv.org/abs/2508.10112
c_{eff} from Resurgence at the Stokes Line
Griffen Adams, Ovidiu Costin, Gerald V. Dunne, Sergei Gukov, Oğuz Öner

http://arxiv.org/abs/2508.10245
The Challenge of Computing Geode Numbers
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Lucia Di Vizio, Federico Pellarin

Topic #11 ——— OP - SF Net 32.5 ——— September 15, 2025

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 32.6 should be sent by November 1, 2025.

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 (2025-2027) are:

Howard Cohl, Chair
Kerstin Jordaan, Program Director
Tom Trogdon, Secretary

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 #12 ——— OP - SF Net 32.5 ——— September 15, 2025

From: OP-SF Net Editors
Subject: Thought of the Month by **Larry Andrews**

"Modern Engineering and physics applications demand more thorough knowledge of applied mathematics than ever before. In particular, it is important to have a basic understanding of *special functions*. All too often in practice a problem is labeled as "intractable" simply because the practitioner has not been exposed to the "bag of tricks" that helps the applied analyst deal with formidable-looking mathematical expressions."

Larry Andrews, Special Functions for Engineers and Applied Mathematicians, 1985, Macmillan Co., New York, viii+357.