



**18th Orthogonal Polynomials,
Special Functions and
Applications – OPSFA-18
17–21 Aug 2026 | Doshisha University, Kyoto, Japan**

Generated: 2026-07-21 09:05:49+09:00

OPSFA-18 Kyoto – 18th Orthogonal Polynomials, Special Functions and Applications

Time	Day 1	Day 2	Day 3	Day 4	Day 5
9:00 10:00		Makiko Sasada	Benjamin Eichinger	María Ángeles García-Ferrero	Dan Dai
10:30 12:00		TS 01 TS 09 TS 13 TS 07 TS 14	TS 01 TS 09 TS 11 TS 05 TS 16	TS 02 TS 10 TS 12 TS 05 TS 15	TS 02 TS 08 TS 04 TS 06 TS 15
12:00 13:30		Lunch	Poster & Lunch (12:00-14:30)	Lunch	Lunch
13:30 14:30	Opening (14:00-14:30)	Kohei Iwaki		Manuela Girotti	Rinat Kedem
15:00 16:30	Jan Felipe van Diejen (14:30-15:30)	TS 01 TS 09 TS 13 TS 07 TS 16	Discussion	TS 02 TS 08 TS 12 TS 05 TS 15	TS 02 TS 08 TS 04 TS 06 TS 15
	Yasuhiko Yamada (15:45-16:45)				
16:45 18:15	Guilherme Silva (17:00-18:00)	TS 01 TS 09 TS 13 TS 07 TS 16 TS 03	Discussion	TS 02 TS 08 TS 12 TS 05 TS 15	Closing (16:30–17:00)
18:00 20:00	Welcome Party (18:00–20:00) @ Hamac de Paradis	Business Meeting (18:15-19:00)	Banquet (18:30–20:30) @ Hotel Okura Kyoto		

List of Thematic Sessions

- TS 01

Painlevé and Integrable Systems (11)
- TS 03

Exact WKB Analysis and Related Topics (Topological Recursion, Conformal Blocks, Beta-Ensembles) (2)
- TS 05

Algebraic Combinatorics (11)
- TS 07

Quantum Walks and Quantum Information (8)
- TS 09

Multiple Orthogonal Polynomials (12)
- TS 11

Orthogonal Polynomials on the Unit Circle (2)
- TS 13

Multivariate Special Functions (7)
- TS 15

General Orthogonal Polynomials, Hypergeometric and Special Functions (including Mathieu, Lamé, Heun, etc.) (14)

- TS 02

Random Matrices and Probability (15)
- TS 04

Orthogonal Polynomials, Mathematical Physics, and Interacting Particle Systems (5)
- TS 06

Combinatorics, q -Series, Partitions, and Number Theory (4)
- TS 08

Asymptotics of Orthogonal Polynomials and Special Functions (11)
- TS 10

Matrix Orthogonal Polynomials (3)
- TS 12

Exceptional Orthogonal Polynomials (7)
- TS 14

Representation Theory and Special Functions (3)
- TS 16

Applications of Orthogonal Polynomials and Special Functions – Interdisciplinary Topics (including Numerical Analysis, Data Science, Machine Learning, etc.) (8)

Day 1 (August 17th)

Day 1	Hardy Hall
14:00 14:30	Opening
Chair	Luc Vinet
14:30 15:30	Jan Felipe van Diejen: Spectrum of quantum relativistic Toda molecule via Hall-Littlewood polynomials
15:30 15:45	Break
Chair	Teruhisa Tsuda
15:45 16:45	Yasuhiko Yamada: Quantum discrete isomonodromic deformations
16:45 17:00	Break
Chair	Inés Pacharoni
17:00 18:00	Guilherme Silva: Orthogonal polynomials at finite temperature
18:00 20:00	Welcome Party@Hamac de Paradis

Day 2 (August 18th)

Day 2	Hardy Hall (Chair: Satoshi Tsujimoto)				
9:00 10:00	Makiko Sasada: Stationary distributions and macroscopic behavior of integrable interacting systems				
10:00 10:30	Break				
Room	Hardy Hall	KMB211	KMB212	KMB213	Clover Hall
Session	TS01-1	TS09-1	TS13-1	TS07-1	TS14
Chair	Teruhisa Tsuda	Walter Van Assche	Margit Rösler	Sho Kubota	Luc Vinet
10:30 12:00	Deniz Bilman Extreme superposition: rogue waves of infinite order, universality, and anomalous temporal decay	Hélder Lima Hahn-classical $(r + 1)$ - fold symmetric r -orthogonal polynomials	Meri Zaimi Bivariate polynomials of Tratnik type	Etsuo Segawa Interpolating walk between quantum and random walks on finite graphs	Luc Lapointe A q -symmetrization Hamilto- nian and a family of orthogo- nal idempotents
	Amari Jaconelli On Fredholm Pfaffians and Riemann-Hilbert problems	Jorge Arvesú On families of discrete mul- tiple orthogonal polynomials on a star-like set	Misael E. Marriaga Generalized symmetric clas- sical orthogonal polynomials in two variables	Hanmeng Zhan Enabling subspace state transfer with quantum coins	Plamen Iliev Gaudin models for some classical multivariate distribu- tions
	Han-Han Sheng On the Fredholm determinat solution to some integrable systems	Juan Antonio Villegas Jacobi-Piñeiro multiple or- thogonal polynomials on the simplex	Genki Shibukawa Commutativity, symmetry and Ruijsenaars-type identities	Taisuke Hosaka Behavior of quantum walk with many weak bridges	Taiyo S. Terada Proof of the Kresch-Tamvakis conjecture
12:00 13:30	Lunch				
Room	Hardy Hall (Chair: Yoshitsugu Takei)				
13:30 14:30	Kohei Iwaki: Bridging Painlevé equations, topological recursion, and exact WKB analysis				
14:30 15:00	Break				
Room	Hardy Hall	KMB211	KMB212	KMB213	Clover Hall
Session	TS01-2	TS09-2	TS13-2	TS07-2	TS16-1
Chair	Deniz Bilman	Walter Van Assche	Nicolas Crampé	Hanmeng Zhan	TBA
15:00 16:30	Roozbeh Gharakhloo Combinatorics of Eulerian graphs on Riemann surfaces	Teresa Laudadio Gaussian quadrature rules for multiple orthogonal poly- nomials	Satoshi Tsuchimi A generalization of multivari- able μ -function and q -Borel summations	Akash Kalita Pretty good fractional revival on abelian Cayley graphs	Iván Area On g -orthogonal polynomials: a theoretical tool arising from applications
	Takahiko Nobukawa A rank 3 linear q -difference equation admitting $W(E_8^{(1)})$ - symmetry	Amin Faghih Recurrence updates and downdates for multiple or- thogonal polynomials	Yosuke Kawamoto Transforms between multi- variate Laguerre and Meixner polynomials and their ap- plications to intertwining relations for stochastic pro- cesses	Koushik Bhakta Pretty good state transfer in Grover walks on graphs	Nabiullah Khan New families of the paramet- ric Apostol polynomials and generalized Voigt functions
	Kanam Park A q -middle convolution and the q -Painlevé equation of type $E_6^{(1)}$	Rostyslav Kozhan Zeros of multiple orthogonal polynomials	Lukas Langen Uniform bounds on the Dunkl kernel	Manuel Domínguez de la Iglesia Exact solutions of open quantum Brownian motions on the real line for two-level systems	Mehub Hassan Convolution and inversion of the Laplace transform in post-quantum calculus: theory and applications
16:30 16:45	Break				
Session	TS01-3	TS09-3	TS13-3&TS03	TS07-3	TS16-2
Chair	Alexander Its	Walter Van Assche	Nicolas Crampé & Yoshitsugu Takei	Etsuo Segawa	TBA
16:45 18:15	Peter D. Miller Infinite order solutions of the AKNS hierarchy	Marcus Vaktinäs Szegő mapping and Geron- imus relations for multiple orthogonal polynomials	Margit Rösler Littlewood-Paley theory for orthogonal expansions associated with root systems	Satoshi Watanabe Analytical asymptotics of quantum spatial search on 2D lattices with regular range- m edges	Priyanka Majethiya Approximation of complex- valued functions by rational interpolation operators: theory and applications
	Percy Deift Applications of a commuta- tion formula II	Tomas Lasic Latimer Asymptotics of discrete mul- tiple orthogonal polynomials	Bart Rosenzweig Small-time and large-time Borel analysis of Schrödinger equations with point interac- tions	Shintaro Yamamura Implementation and perfor- mance evaluation of CVaR- QAOA for ternary portfolio optimization	Manoj Kumar Approximation properties of fractional Szász-Kantorovich operators involving Hermite polynomials
		Maxim Yattselev Strong asymptotics of weighted orthogonal poly- nomials	Gergő Nemes Exact resurgence in exact WKB analysis		
18:15 19:00	Business Meeting@Hardy Hall				

Day 3 (August 19th)

Day 3	Hardy Hall (Chair: Howard S. Cohl)				
9:00 10:00	Benjamin Eichinger: Universality limits and beyond				
10:00 10:30	Photo Session & Break				
Room	Hardy Hall	KMB211	KMB212	KMB213	Clover Hall
Session	TS01-4	TS09-4	TS11	TS05-1	TS16-3
Chair	Peter D. Miller	Maxim Yattselev	Kazuki Maeda	Hajime Tanaka	TBA
10:30 12:00	Alexander Stokes Discrete Painlevé equations from orthogonal polynomials: non-conjugate translations, nodal curves and exotic symmetry groups Anton Dzhamay Discrete Painlevé equations with constraints: their geometry and symmetry Hidehito Nagao Padé method and hypergeometric structures in discrete Painlevé-type systems	Adam Doliwa Non-commutative multiple bi-orthogonal polynomials: formal approach and integrability Thomas Wolfs Multiple orthogonal polynomials of derivative type Walter Van Assche Multiple orthogonal polynomials with modified Bessel weights	Dustin Newland On the expected number of real level crossings of random polynomials spanned by OPUC Xiang-Ke Chang Modified Camassa–Holm peakons, extreme degenerations into Toda-type lattices, and interpretations in terms of orthogonality	Paul Terwilliger Strengthening the balanced set condition for the distance-regular graph of the bilinear forms Hirotake Kurihara Imprimitive association schemes and elimination theory Yushan Pan Irreducible representations of the S_3 -symmetric tridiagonal algebra: the complete graph case	Jose Arcia Manoleskos UL and LU factorizations of birth-death processes associated with classical orthogonal polynomials Lidia Fernández Approximation and cubature on planar domains via Zernike-like bases Nicola Mastronardi Product integration rules for highly oscillatory integrals
12:00 14:30	Lunch Poster Session@lobby				
14:30 18:00	Discussion				
18:30 20:30	Banquet@Hotel Okura Kyoto				

List of Poster Presentations				
Ichii Fujii (PS01-1) Construction of $\mathbb{Z}_2^2$ -integrable hierarchy using $\mathbb{Z}_2^2$ -graded algebras	Ryosuke Naganuma (PS01-2) Construction and classification of multi-lump solutions of the elliptic two-dimensional Toda lattice equation	Yuichi Ueno (PS01-3) On the quantization of higher order Painlevé systems	Deborah Oliveira (PS02-1) Provable Weak-to-Strong generalization for neural networks using random matrix theory	Subaru Hamada (PS04-1) 3-dimensional spin chain model with nearest neighbor couplings derived from 3-variable Krawtchouk polynomials
Yuki Honda (PS04-2) Orthogonal decomposition and mode expansion of gauge fields on S^2 in the presence of background gauge fields	Yuta Nasuda (PS04-3) SWKB quantization condition and solvability via classical orthogonal polynomials	Qian Chen (PS07-1) Testing k -block-positivity via semidefinite programs and its complexity	Kosei Nakamura (PS07-2) Quantum walks on the non-binary Johnson scheme	Rachel Bailey (PS12-1) A generalization of DEK-type orthogonal polynomials
Danilo Jr Dela Cruz (PS16-1) The singular values of Lévy's area matrix				

Day 4 (August 20th)

Day 4	Hardy Hall (Chair: David Gómez-Ullate)				
9:00 10:00	María Ángeles García-Ferrero: The taxonomy of exceptional orthogonal polynomials				
10:00 10:30	Break				
Room	Hardy Hall	KMB211	KMB212	KMB213	Clover Hall
Session	TS02-1	TS10	TS12-1	TS05-2	TS15-1
Chair	Karl Liechty	Walter Van Assche	Satoru Odake	Hajime Tanaka	Rakesh K. Parmar
10:30 12:00	Leslie Molag Local universality of determinantal point processes on $\mathbb{C}^d$	Max van Horssen Shift operators for non-symmetric Heckman-Opdam polynomials and non-symmetric Macdonald-Koornwinder polynomials	F. Alberto Grünbaum Bispectrality and the ad-conditions	Hideki Matsumura Hausdorff construction and combinatorial polynomials	Andrei Martínez-Finkelshtein Hypergeometric and q -hypergeometric polynomials with finite free convolutions
	Joakim Cronvall A direct approach to soft and hard edge universality for random normal matrices	Arno Kuijlaars Matrix valued orthogonal polynomials in random tiling models	Ignacio N. Zurrián Equivalences for matrix-valued bispectral polynomials.	Ryutaro Misawa Sharp bounds for equichordal tight fusion frames and Grassmann designs	Dmitrii Karp q -polynomial perturbations of Heine's and Jackson's transformations
	Sampad Lahiry Birth of a gap: critical phenomena in the normal matrix model.	Inés Pacharoni Matrix-valued Laguerre-type orthogonal polynomials, Darboux transformations and differential operators	W. Riley Casper Binomial prolates, tau functions, and point counting	Junichiro Matsuda Algebraic quantum graph theory and application to orthogonal polynomials	Takao Suzuki An affine Weyl group action on the basic hypergeometric series arising from the Cluster algebra
12:00 13:30	Lunch				
Room	Hardy Hall (Chair: Peter D. Miller)				
13:30 14:30	Manuela Girotti: Random matrices, random particles, random solitons, and soliton gasses				
14:30 15:00	Break				
Room	Hardy Hall	KMB211	KMB212	KMB213	Clover Hall
Session	TS02-2	TS08-1	TS12-2	TS05-3	TS15-2
Chair	Lu Wei	Andrei Martínez-Finkelshtein	Yves Grandati	Hajime Tanaka	Taikei Fujii
15:00 16:30	Chenhao Lu On the eigenvalue rigidity of the Jacobi unitary ensemble	Vinay Shukla A Riemann-Hilbert problem for Jacobi-Piñero orthogonal polynomials	Robert Milson Spectral diagrams and exceptional polynomials	Younggwang Cho An explicit formula for Koornwinder moments and Rains' positivity conjecture	Chihiro Sato Confluent q -Heun equations based on Newton polygon
	Teije Kuijper Hermitian Jacobi polynomials on the simplex	Vladimir Lysov Bipolar Green function and the asymptotics of Cauchy biorthogonal polynomials	Antonio J. Durán Using quasi-Darboux transformations to construct exceptional matrix polynomials	Minho Song Moments and lattice paths for orthogonal polynomials of type R_{II}	Ayaka Murakami q -integral transformation of q -Heun equation and its applications
	John J. Lopez Santander On the asymptotic distribution of the largest eigenvalue of unbalanced complex Jacobi ensembles	Gökalp Alpan On a Szegő theorem for extremal polynomials	Under Adjustment	Jihyeug Jang Discriminants of orthogonal polynomials via symmetric functions	Priyabrata Gochhayat On zeros of some ${}_2\phi_1$ polynomials associated with q -Meixner polynomials
16:30 16:45	Break				
Session	TS02-3	TS08-2	TS12-3	TS05-4	TS15-3
Chair	Leslie Molag	Vladimir Lysov	Robert Milson	Hajime Tanaka	Dmitrii Karp
16:45 18:15	Michael Voit Dunkl and Bessel processes with drift: Motivation, an application to noncompact free Brownian motions, and some limit results	Jacob S. Christiansen Chebyshev polynomials related to Jacobi weights	David Gómez-Ullate Recurrence relations for exceptional Legendre polynomials	Jae-Ho Lee Two bases for the Onsager Lie algebra $\mathcal{O}$ and their action on finite-dimensional irreducible $\mathcal{O}$ -modules	Taikei Fujii Linear relations for Kajihara's q -hypergeometric series
	Wangjun Yuan Operator norm bounds for multi-leg matrix tensors and applications to random matrix theory	Erwin Miña-Díaz Chebyshev and Faber polynomials on curves with corners and cusps	Yves Grandati Rational solutions of dressing chains and higher order Painlevé V equations	Hau-Wen Huang Verma modules over the universal Askey-Wilson algebra	Rakesh K. Parmar Extended Exton's double hypergeometric functions: Integral forms and functional bounds
	Seungjoon Oh Dissipative spectral form factor of the complex elliptic Ginibre ensemble across various non-Hermiticity regimes	Benedikt Buchecker Chebyshev polynomials on a Jordan arc			Pirivina S Integral representations and functional bounds for the generalized Horn's function

Day 5 (August 21st)

Day 5	Hardy Hall (Chair: Andrei Martínez-Finkelshtein)				
09:00 10:00	Dan Dai: Beyond Tracy-Widom: Fredholm determinants, integrable PDEs, and large gap asymptotics				
10:00 10:30	Break				
Room	Hardy Hall	KMB211	KMB212	KMB213	Clover Hall
Session	TS02-4	TS08-3	TS04-1	TS06-1	TS15-4
Chair	Johan Kuijper	Howard S. Cohl	Sarah Post	Shuhei Kamioka	Takao Suzuki
10:30 12:00	Victor Alves Deformations of OP ensembles at a regular bulk point	Árpád Baricz Infinitely divisible modified Bessel distributions	Luc Vinet The dynamical algebra of the generic superintegrable model on the two-sphere	Soichi Okada Universal rational Q -functions	Shunya Adachi Asymptotic analysis of the confluent Dotsenko–Fateev equation
	Yeong-Gwang Jung q -deformation of the Marchenko-Pastur law	Hideshi Yamane Asymptotic expansions of finite Hankel transforms and the surjectivity of convolution operators	Giovanni Rastelli Symmetry operators and Staeckel separation of Dirac's equation on 3-dimensional spin manifolds	Masaki Kato Multiple polylogarithms, symmetric functions and discrete integrable systems	Saiei-Jaeyeong Matsubara-Heo Irregular complex hypergeometric integrals
	Lu Wei Average entropy of Bogoliubov-Kubo-Mori random state ensemble	Alexander Dyachenko On vector and branching continued fractions	Kohei Noda Two-dimensional Coulomb gases with rotation-invariant potentials with singularities	Stuti Mohanty Characterization of non-singular hyperplanes of $\mathcal{H}(s, q^2)$ in $\text{PG}(s, q^2)$	Richard Mikaël Slevinsky Matrix equations and orthogonal polynomials
12:00 13:30	Lunch				
Room	Hardy Hall (Chair: Luc Lapointe)				
13:30 14:30	Rinat Kedem: q -Whittaker and affine Laumon functions from integrable quiver mutations				
14:30 15:00	Break				
Room	Hardy Hall	KMB211	KMB212	KMB213	Clover Hall
Session	TS02-5	TS08-4	TS04-2	TS06-2	TS15-5
Chair	Joakim Cronvall	Árpád Baricz	Hiroshi Miki	Takafumi Mase	Shunya Adachi
15:00 16:30	Karl Liechty Multiple orthogonal polynomials appearing in the six-vertex model with symmetries	Howard S. Cohl Orthogonality relations for the symmetric polynomials in the q -Askey scheme	Umme Zainab Integral equations for Sheffer-Bessel functions through umbral operator	Nobuhiro Asai A two-parameter deformation of the Charlier polynomials: bridging combinatorics and probability	Kerstin Jordaán Single-point completed interlacing for orthogonal and non-orthogonal polynomial families
	Eui Yoo Free energy expansion of determinantal Coulomb gases in the quadratic fields with a point charge	Lennart A. Huebner Asymptotics of weighted Bergman polynomials	Sarah Post Exceptional orthogonal polynomials, exactly solvable quantum systems and their deformations		Vikash Kumar Two-point completed interlacing and cross-family Wronskian inequalities for related polynomial sequences
	Jiahao Du Asymptotics of the partition function with a one-cut singular potential at the edge				
16:30 17:00	Closing				