9th International Conference on Computational Harmonic Analysis

in conjunction with the 38th Shanks Lecture

May 18–22, 2026 Wilson Hall, Vanderbilt University, Nashville, Tennessee, USA | Main, Plenary & Shanks Lectures: Auditorium 103

Monday, May 18, 2026

Time				
09:00–09:15	**Welcome & Opening Remarks**			
09:15–10:15	**PLENARY 1 — Kasso Okoudjou** On the four point HRT Conjecture · Auditorium 103			
10:15–10:30	**Coffee Break**			
10:30–11:15	**MAIN SPEAKER 1 — Caroline Moosmüller** Learning in the space of probability measures · Auditorium 103			
Time	**Room 121**	**Room 115**	**Room 113**	**Room 112**
	— INVITED SESSIONS —			
11:20–11:50	**Christopher Heil** Unconditional Schauder Frames With Frame Inequalities	**Mark Iwen** A Fast Streaming Approach for Sparse PCA and Related Eigenvector Approximations	**Gustavo Rohde** Optimal Transport as a Transform for Scalar Conservation Laws	**Gaik Ambartsoumian** Symmetry, Range, and Surprises in the Spherical Mean Transform
11:55–12:25	**Carlos Cabrelli** Optimal Frames by Operator Orbits	**Halyun Jeong** Kaczmarz and Related Iterative Methods for Sparse Recovery and Robust Streaming Regression	**Amir Sagiv** Sampling by Transport and the Approximation of Measures	**Thibaud Alemany** Geometric Properties of Reproducing Kernels in Model Spaces
12:25–14:20	**Lunch Break**			
14:20–15:20	**PLENARY 2 — Ozgur Yilmaz** Generative compressed sensing: coherence, sampling, and denoising · Auditorium 103			
15:20–15:35	**Coffee Break**			
Time	**Room 121**	**Room 115**	**Room 113**	**Room 112**
	— INVITED SESSIONS —			
15:35–16:05	**David R. Larson** Group and semigroup frames	**Mauro Maggioni** Examples in statistical learning where compositional structure helps avoid the curse of dimensionality	**Soheil Kolouri** Sliced Transportation Plans for Optimal Transport, Unbalanced Transport, and Gromov-Wasserstein Problems	**Darrin Speegle** Constructing Smooth Wavelets via Matrix Dilations: Criteria and New Results
16:10–16:40	**Geetika Verma** Frames of Fractals	**Wenjing Liao** Low-Dimensional Data Geometry and In-Context Learning with Transformers	**Shiying Li** Gromov-Hausdorff distances for labeled metric spaces	**Emanuel Guariglia** Vieta-Lucas wavelets and related open problems
16:45–17:15	**Vignon Oussa** Frames generated by solvable actions	**Dominik Stöger** Linear regression with overparameterized linear networks: Sharp upper and lower bounds for implicit ℓ_1-regularization	**Ivan Medri** Barycentric Coding Models in Gromov-Wasserstein Spaces	**Emily King** Frame Theory, Transformers, and Superposition
Time	**Room 121**	**Room 115**	**Room 113**	**Room 112**
	— CONTRIBUTED SESSIONS —			
17:20–17:50	**Sam Scholze** Stability of Reconstructions from Sampling Erasures	**Shuyang Ling** Improved global landscape guarantees for low-rank factorization in synchronization	**Shuang Guan** The HRT Conjecture for a Symmetric (3,2) Configuration	**BADR ALKAHTANI** Numerical solution of 3D non-linear partial differential equations system
18:00–20:00	**Welcome Reception — Wilson Hall, Outdoor Terrace**			

Tuesday, May 19, 2026

Time					
09:00–10:00	**PLENARY 3 — Joan Bruna** A dynamic perspective of high-dimensional learning · Auditorium 103				
10:00–10:15	☕ **Coffee Break**				
10:15–11:00	**MAIN SPEAKER 2 — Sui Tang** Data-Driven Discovery of Interaction Kernels in Particle-Based Systems and Their Mean-Field Limits · Auditorium 103				
Time	**Room 121**	**Room 115**	**Room 113**	**Room 112**	**Room 122**
	— INVITED SESSIONS —				
11:05–11:35	**Rocio Diaz Martin** Source Recovery through Dynamical Sampling Frames	**Rayan Saab** The Measure of Deception: An Analysis of Data Forging in Machine Unlearning	**Olena Burkovska** Learning Sparse Memory Kernels in Non-Markovian Surrogate Models	**Matthew Thorpe** Linearising Optimal Transport	**Götz Pfander** On exponential bases with integer frequencies and cube tilings
11:40–12:10	**Ursula Molter** Achieving Minimal Rotor Redundancy for Fault-Tolerant UAVs through Dynamical Sampling	**Konstantin Pieper** Uncertainty quantification for sparse network surrogates	**Bohan Zhou** Accelerating MCMC on discrete-state space	**Dongwei Chen** Optimal Transport Advances Climate Science	**Sumit Kumar Sharma** On Quaternionic Banach Frames
12:10–14:05	🍽 **Lunch Break**				
14:05–15:05	**PLENARY 4 — Felix Krahmer** Assessing the Stability of Sigma-Delta Quantization: From a Universal Criterion to a Trajectory-Based Analysis · Auditorium 103				
15:05–15:20	☕ **Coffee Break**				
Time	**Room 121**	**Room 115**	**Room 113**	**Room 112**	**Room 122**
	— INVITED SESSIONS —				
15:20–15:50	**Deguang Han** Frame Dilations and Beyond	**Nicholas Boffi** Flow Maps: Flow-based generative models with lightning-fast inference	**James Murphy** Static and Dynamic Optimal Transport for Analysis and Synthesis on Graphs	**Francisco Villarroya Alvarez** A refined algorithm for the numerical computation of Fast Wavelet Transforms	**Xuemei Chen** General Matrix Separation and Its Algorithms
15:55–16:25	**Ilya Krishtal** Perturbations of Dynamical Frames	**Demetrio Labate** Ambient-free approximations for deep ReLU Networks on manifolds	**Clayton Shonkwiler** Optimization and Special Matrices	**Rodolfo Torres** Compactness of Commutators of Smoothing Pseudodifferential Operators and Pointwise Multiplication with Functions in XMO	**Gino Angelo Velasco** Mixed-state localization operators, phase space localization, and frames
16:30–17:00	**Diana Stoeva** Inversion of frame multipliers on Hilbert, Banach, and Fréchet spaces	**Joseph Iverson** Group invariants of minimum distortion	**Molei Tao** How Accurate and Creative is Diffusion Model? A Quantification of its Generation Accuracy and Generalization Capability	**Keaton Hamm** Structured Approximations in Wasserstein Space	**Manos Papadakis** Multi-Dimensional Compactly Supported Parseval Framelets
Time	**Room 121**	**Room 115**	**Room 113**	**Room 112**	**Room 122**
	— CONTRIBUTED SESSIONS —				
17:05–17:35	**Tiantian Yang** Directed Weighted Graph Neural Networks with Tensor Fusion for Multi-Omics Cancer Subtype Classification	**Jiading Liu** Data-Driven Kernel Framework for Green's Functions of Linear PDEs	**Laura Weidensager** Sensitivity Analysis on the Sphere	**Oleg Asipchuk** Centrally Symmetric Floating Bodies and Inscribed Hexagons	—

Wednesday, May 20, 2026

Time	Room 121	Room 115	Room 113	Room 112
09:00–10:00	**PLENARY 5 — Dongbin Xiu** Modeling Observable Dynamics: Flow Map Learning and Delay Representation · Auditorium 103			
10:00–10:15	**Coffee Break**			
10:15–11:00	**MAIN SPEAKER 3 — Azita Mayeli** Wave packet decomposition and quantitative spectral estimates · Auditorium 103			
	— INVITED SESSIONS —			
11:05–11:35	**Davide Barbieri** Scattering networks on finite groups	**Shidong Li** Tail-minimization and the Tail-atomic Norm for Gridless Spectrum Estimations	**Laura De Carli** Quasi-tight Gabor Frames and Block Structure of Frame Operators	**Bernhard Bodmann** Heat kernels, sparsity and machine learning on graphs
11:40–12:10	**Pu-Ting Yu** Uniform discretization of short-time Fourier transform	**Myung-Sin Song** Operator theory, kernels, and feedforward neural networks	**Palle Jorgensen** Harmonic analysis and frames for fractal IFS L2 spaces via Infinite products of projections	**Mingsong Yan** Infinite-Node Limits of Continuous-Depth Graph Neural Networks
12:10–14:00	**Lunch Break**			
14:00–15:00	**SHANKS LECTURE — Yann LeCun** TBA · Auditorium 103			
15:00–15:15	**Group Photo — Wilson Hall Entrance**			
15:15–16:30	**Reception — Wilson Hall Outdoor Terrace**			
16:30	**Free Afternoon**			

Thursday, May 21, 2026

Time					
09:00–10:00	**PLENARY 6 — Robert McCann** A geometric approach to apriori estimates for optimal transport maps · Auditorium 103				
10:00–10:15	☕ **Coffee Break**				
10:15–11:00	**MAIN SPEAKER 4 — Alex Cloninger** From Local Views to Global Embedding: Methods in Bottom-up Manifold Learning · Auditorium 103				
Time	**Room 121**	**Room 115**	**Room 113**	**Room 112**	**Room 122**
	— INVITED SESSIONS —				
11:05–11:35	**Longxiu Huang** Cross-Concentrated Sampling for Data Completion	**Vahan Huroyan** Theoretical Analysis of the Projected Power Method for Permutation Synchronization	**Somantika Datta** Sparse equiangular tight frames	**Dimitri Van De Ville** Graph Signal Processing for Neuroimaging: Bringing Brain Structure and Function Together	**Dejan Slepcev** Radon-Wasserstein Gradient Flows for Sampling in High Dimensions
11:40–12:10	**Johannes Maly** Reliable one-bit quantization of bandlimited graph data via single-shot noise shaping	**Joel Rosenfeld** Occupation Kernel Hilbert Spaces for Fractional Order Liouville Operators and Dynamic Mode Decomposition	**Matthew Fickus** Symmetries of lifted Grassmannian codes	**Haomin Zhou** A parameterized Wasserstein Hamiltonian flow approach for solving the Schrödinger equation	**Ayush Bhandari** Unlimited Sensing Off-the-Grid: Super-Resolving Time and Amplitude
12:10–14:05	🍽 **Lunch Break**				
Time	**Room 121**	**Room 115**	**Room 113**	**Room 112**	**Room 122**
	— INVITED SESSIONS —				
14:05–14:35	**Philippe Jaming** Curved Ingham inequalities	**Michael Perlmutter** Vector diffusion wavelets for geometric scattering transforms and graph neural networks	**Daniel Freeman** Stable phase retrieval for nonlinear subsets of infinite dimensional Hilbert spaces	**Qiyu Sun** Shift-invariant spaces on finite undirected graphs	**Hamid Krim** Learning with Volterra Networks: A System Theoretic Perspective
14:40–15:10	**Mitchell Taylor** Maximal inequalities and almost everywhere convergence of series	**Ming Zhong** Learning Interaction Kernels from Equilibrium Collective Behaviors	**Dorsa Ghoreishi** Phase retrieval and approximation of sections of vector bundles	**Joseph Lakey** New Approaches to Convergence of Walsh-Fourier Series	**Anna Veselovska** Implicit Regularization for Tubal Tensor Factorizations via Gradient Descent
15:10–15:25	☕ **Coffee Break**				
15:25–15:55	**Lotfi Hermi** The Spectral Zeta Function: A Novel Approach for Sturm Liouville Problems via Brownian Bridge Kernels	**Eric Weber** The Kaczmarz Algorithm in Hilbert C*-Modules	**Kai Liu** Operator valued frames and phase retrieval of quantum channels	**Radu Balan** Factorization of positive-semidefinite operators with absolutely summable entries	**Mutaz Mohammad** Carleson Frames for Proportional-Delay Dynamics: A Dynamical Sampling Perspective
Time	**Room 121**	**Room 115**	**Room 113**	**Room 112**	**Room 122**
	— CONTRIBUTED SESSIONS —				
16:00–16:30	**Zhaiming Shen** Understanding In-Context Learning on Structured Manifolds: Bridging Attention to Kernel Methods	**Shankhadeep Mondal** Extreme points of optimal dual frames for erasures	**Kaitlyn Hohmeier** k-Nearest Neighbors in Gromov-Wasserstein Space	**Cameron L. Williams** An Analysis of the Uncertainty Principle Through the Lens of Banded Matrices	—

Friday, May 22, 2026

Time	Room 121	Room 115	Room 113	Room 112
	— INVITED SESSIONS —			
09:00–09:30	**Alex Sietsema** Fairness, theory, and sampling paradigms in machine learning	**Thomas Allard** Entropy Numbers from Time-Frequency Representations	**Michelle Michelle** Wavelet Method for Elliptic Interface Problems	**Victor Bailey** Dynamical Frames and Hyperinvariant Subspaces
09:35–10:05	**Akram Aldroubi** Partition of Unity Neural Networks for Interpretable Classification with Explicit Class Regions	**Brody Johnson** Saturation Recovery via the Frame Algorithm	**Roza Aceska** Completing an oblique dual frame	—
10:05–10:20	Coffee Break			
Time	**Room 121**	**Room 115**	**Room 113**	**Room 112**
	— CONTRIBUTED SESSIONS —			
10:20–10:50	**Max Getter** When discretization and depth change what scattering features can (and cannot) do	**Hannah Laus** Solving Inverse Problems with Deep Linear Neural Networks: Global Convergence Guarantees	**Carlos Sing Long** Worst-case optimal multipliers for extrapolation in frequency	—
10:50–11:05	Closing Remarks			