

**Program Schedule**

**Monday, May 14**

	<b>Wilson Hall</b>			
8:00-8:55	<b>Registration</b>			
8:55-9:00	<b>Welcome</b>			
	<b>Room 103</b> Chair:			
9:00-9:45	<b>Jared Tanner</b> Sparse non-negative super-resolution: simplified and stabilized			
	<b>Room 103</b> Chair:			
9:50-10:35	<b>Gregory Beylkin</b> On computing PDFs of products of random variables			
10:35-11:00	<b>Coffee break</b>			
	<b>Room 126</b> Chair:	<b>Room 112</b> Chair:	<b>Room 113</b> Chair:	<b>Room 115</b> Chair:
11:00-11:30	<b>Ding-Xuan Zhou</b> Mathematical analysis of deep CNNs and distributed learning	<b>Min-Jun Lai</b> Alternating projection algorithm for matrix completion	<b>Deguang Han</b> Projective phase-retrievable representation frames	<b>Dustin Mixon</b> Monte Carlo approximation certificates for k-means clustering
11:35-12:05	<b>Soledad Villar</b> Stable denoising with generative networks and spherical harmonics	<b>Ozgun Yilmaz</b> Near-optimal sample complexity for convex tensor completion	<b>Cheng Cheng</b> Stable phaseless sampling and reconstruction	<b>Shuyang Ling</b> When do birds of a feather flock together? Kmeans, proximity and conic programming
	<b>Lunch Break</b>			
	<b>Room 103</b> Chair:			
2:00-2:45	<b>Deanna Needell</b> Iterative projective approaches to large-scale linear systems			
	<b>Room 103</b> Chair:			
2:50-3:35	<b>Anna Vershynina</b> Speed of entanglement generation in quantum systems			
3:35-4:00	<b>Coffee Break</b>			
	<b>Room 126</b> Chair:	<b>Room 112</b> Chair:	<b>Room 113</b> Chair:	<b>Room 115</b> Chair:
4:00-4:30	<b>Rima Alaifari</b> Stable phase retrieval in infinite dimensions	<b>Killian Stampfer</b> Generalized exponential Prony method	<b>Keith Taylor</b> Group representations and higher dimensional wavelet-like systems	<b>Julianne Chung</b> Efficient methods for large and dynamic inverse problems
4:35-5:05	<b>Kiryung Lee</b> Phase retrieval of low-rank matrices	<b>Toni Volkmer</b> Multiple rank-1 lattice sampling and high-dimensional sparse FFT	<b>Brad Currey</b> An abstract Calderon condition for wavelets on non-commutative domains	<b>Matteo Santacesaria</b> Inverse problems for PDEs via infinite dimensional compressed sensing
5:10-5:40	<b>Michael Perlmutter</b> Phase retrieval from windowed Fourier measurements via Wigner deconvolution and angular synchronization with associated lower bounds	<b>Christina Frederick</b> Sampling and reconstruction formulas for higher dimensional sampling	<b>Vignon Oussa</b> Frames arising from solvable actions	<b>Marzieh Hasannab</b> Operator representations of frames: boundedness, duality, and stability

Tuesday, May 15

<b>Wilson Hall</b>					
<b>Room 103</b> Chair:					
9:00-9:45	<b>Irene Waldspurger</b> Convergence rate of the Douglas-Rachford method for finding best approximating pairs				
<b>Room 103</b> Chair:					
9:50-10:35	<b>Philipp Grohs</b> Approximation theory, numerical analysis and deep learning				
10:35-11:00	<b>Coffee break</b>				
	<b>Room 126</b> Chair:	<b>Room 112</b> Chair:	<b>Room 113</b> Chair:	<b>Room 115</b> Chair:	<b>Room 121</b> Chair:
11:00-11:30	<b>Matt Hirn</b> Multiscale machine learning for many particle physics with wavelet scattering transforms	<b>Kasso Okoudju</b> The frame set of the B-spline	<b>Eric Weber</b> The Kaczmarz algorithm and harmonic analysis of singular measures	<b>Hau-tieng Wu</b> Geometric approach to medical time series challenges	<b>Elena Cordero</b> On the reduction of the interferences in the Born Jordan distribution
11:35-12:05	<b>Weilin Li</b> Time-frequency scattering transforms: theory and applications	<b>Jean-Pierre Gabardo</b> Frames of exponentials with spectrum contained in a finite union of lattices	<b>Dorin Dutkay</b> Orthonormal bases generated by Cuntz algebras	<b>Nikolaos Mitsakos</b> Fast illumination normalization for face and object detection	<b>Ron Levie</b> Sparse continuous wavelet transforms via a wavelet-Plancherel theory
<b>Lunch Break</b>					
<b>Room 103</b> Chair:					
2:00-2:45	<b>Shahaf Nitzan</b> The Balian-Low Theorem in the finite-dimensional setting				
<b>Room 103</b> Chair:					
2:50-3:35	<b>Bin Han</b> Directional tight and quasi-tight framelets with applications				
3:35-4:00	<b>Coffee Break</b>				
	<b>Room 126</b> Chair:	<b>Room 112</b> Chair:	<b>Room 113</b> Chair:	<b>Room 115</b> Chair:	<b>Room 121</b> Chair:
4:00-4:30	<b>Zhiqiang Xu</b> Generalized phase retrieval	<b>Ole Christensen</b> Frames and dynamical sampling	<b>Laurent Jacques</b> Quantized compressive sensing with RIP matrices: the benefit of dithering	<b>Yiming Ying</b> Stochastic optimization for AUC maximization in machine learning	<b>Azita Mayeli</b> Smooth and symmetric convex sets have no orthogonal Gabor bases
4:35-5:05	<b>Aditya Vishwanathan</b> Phase retrieval from local measurements: deterministic measurement constructions	<b>Roza Aceska</b> Spatio-temporal trade-off for initial data best approximation	<b>Thang Huynh</b> Accurate quantization in redundant systems	<b>Yunlong Feng</b> Statistical learning approach to modal regression	<b>Calvin Hotchkiss</b> Fourier bases on the skewed Sierpinski Gasket
5:10-5:40	<b>Halyun Jeong</b> Convergence of the randomized Kaczmarz method for phase retrieval	<b>Longxiu Huang</b> Frames induced by the action of continuous powers of an operator	<b>Julien Fageot</b> Sparsity of Levy processes	<b>Ke Ye</b> Tensor network ranks	

Wednesday, May 16

	<b>Wilson Hall</b>
	<b>Room 103</b>
	Chair:
9:00-9:45	<b>Naoki Saito</b> How can we naturally sort and organize Laplacian eigenvectors?
	<b>Room 103</b>
	Chair:
9:50-10:35	<b>Rayan Saab</b> New and improved binary embeddings of data (and quantization for compressed sensing with structured random matrices)
10:35-11:00	<b>Coffee break</b>
	<b>Room 103</b>
	Chair:
11:00-11:45	<b>Philippe Jaming</b> Mean convergence of prolate spheroidal wave function expansions
	<b>Lunch Break</b>
	<b>Room 103</b>
	Chair:
2:00-3:00	<b>Shanks Lecture: Stephane Mallat</b> Deep convolutional neural networks and harmonic analysis
3:00-4:00	<b>Poster Session</b> <b>Evan Camrud:</b> Applications of a distributional fractional derivative to Fourier analysis and its related differential equations <b>Zhiying Fang:</b> Distributed learning with manifold regularization <b>Kung-Ching Lin:</b> Analysis of decimation on finite-frames with Sigma-Delta quantization <b>Eric Lybrand:</b> Quantization for low rank matrix recovery <b>Anna Seitz:</b> A generalized Kaczmarz algorithm <b>Chendi Wang:</b> Learning with centered reproducing kernels

Thursday, May 17

	<b>Wilson Hall</b>				
	<b>Room 103</b> Chair:				
9:00-9:45	<b>Rachel Ward</b> Learning the learning rate in gradient descent methods				
	<b>Room 103</b> Chair:				
9:50-10:35	<b>Guido Montufar</b> Representation, approximation, and optimization advances in restricted Boltzmann machines				
10:35-11:00	<b>Coffee break</b>				
	<b>Room 126</b> Chair:	<b>Room 112</b> Chair:	<b>Room 113</b> Chair:	<b>Room 115</b> Chair:	<b>Room 121</b> Chair:
11:00-11:30	<b>John Benedetto</b> Spectral extensions for all Radon measures via Beurling extrapolation	<b>Gerlind Plonka</b> Computation of adaptive Fourier series by sparse approximation of exponential sums	<b>Richard Zalik</b> Some smooth compactly supported tight wavelet frames with vanishing moments	<b>Julia Dobrosotskaya</b> Anisotropic diffuse interface functionals based on sparse representations	<b>Vahan Huroyan</b> Solving jigsaw puzzles by the connection graph Laplacian
11:35-12:05	<b>Joe Lakey</b> An analogue of Slepian vectors for Boolean hypercubes	<b>Mark Iwen</b> Sparse harmonic transforms: a new class of sublinear-time algorithms for approximating functions of many variables	<b>Darrin Speegle</b> The wavelet existence problem	<b>Xuemei Chen</b> Recovery of dictionary-sparse signals with random measurements	<b>Daniel Mckenzie</b> Single cluster pursuit: a graph clustering algorithm using compressive sensing
	<b>Lunch Break</b>				
	<b>Room 103</b> Chair:				
2:00-2:45	<b>Radu Balan</b> Lipschitz extensions in inverse problems				
	<b>Room 103</b> Chair:				
2:50-3:35	<b>Qingtang Jiang</b> Adaptive synchrosqueezing transform with a time-varying parameter for signal separation				
3:35-4:00	<b>Coffee Break</b>				
	<b>Room 126</b> Chair:	<b>Room 112</b> Chair:	<b>Room 113</b> Chair:	<b>Room 115</b> Chair:	<b>Room 121</b> Chair:
4:00-4:30	<b>Keri Kornelson</b> Applications of spatiotemporal sampling to problems in frame theory	<b>Guangliang Chen</b> On landmark-based large scale spectral clustering: recent advances and a unified view	<b>Matthew Fickus</b> Equiangular tight frames that contain regular simplices	<b>Mark Lammers</b> Uncertainty for windows of oversampled Parseval frames	<b>Stephen Casey</b> Poisson Summation, Selberg Trace, and Sampling on General Manifolds
4:35-5:05	<b>Friedrich Philipp</b> Frame properties of operator orbits	<b>Anna Little</b> Path-based spectral clustering: guarantees, robustness to outliers, and fast algorithms	<b>Emily King</b> Negative cliques in sets of equiangular lines	<b>Michael Northington</b> Finite Balian-Low theorems and applications of the quantitative BLT	<b>Steve Damelin</b> On smooth Whitney extensions of almost isometries with small distortion, interpolation, and alignment in d-dimensional Euclidean space
5:10-5:40	<b>Sui Tang</b> Universal constructions in dynamical sampling	<b>Keaton Hamm</b> CUR decomposition and subspace clustering	<b>John Jasper</b> Equiangular tight frames from group divisible designs	<b>Sara Leshen</b> A Balian-Low type theorem for Gabor Schauder bases	<b>Robert Mendez</b> Binary block codes from random hyperplane tessellations of uniformly Euclidean embeddings

Friday, May 18

	<b>Wilson Hall</b>				
	<b>Room 103</b>				
	Chair:				
9:00-9:45	<b>Simon Foucart</b>				
	Assimilating data to optimally compute quantities of interest				
	<b>Room 103</b>				
	Chair:				
9:50-10:35	<b>Jose Luis Romero</b>				
	Sampling with totally positive functions				
10:35-11:00	<b>Coffee break</b>				
	<b>Room 126</b> Chair:	<b>Room 112</b> Chair:	<b>Room 113</b> Chair:	<b>Room 115</b> Chair:	<b>Room 121</b> Chair:
11:00-11:30	<b>Pete Casazza</b> The solution to the quantum detection problem	<b>Wenjing Liao</b> Multiscale methods for high-dimensional data with low-dimensional structures	<b>Daniel Freeman</b> The discretization problem for continuous frames	<b>Nicholas Marshall</b> Bi-stochastic kernels, manifold learning, and diffusion maps	<b>Filippo De Mari</b> Shearlets as multi-scale Radon transforms
11:35-12:05	<b>Felix Krahmer</b> On unlimited sampling	<b>Xiaosheng Zhuang</b> Multi-scale data analysis: framelets, manifolds, graphs	<b>Jakob Lemvig</b> Criteria for generalized translation-invariant frames	<b>Armenak Petrosyan</b> Joint sparse recovery via manifold optimization	<b>Nikolaos Karantzas</b> On the design of multi-dimensional compactly supported Parseval framelets with directional characteristics
	<b>Lunch Break</b>				
	<b>Room 103</b>				
	Chair:				
2:00-2:45	<b>Javad Mashreghi</b>				
	Fejer polynomials in local Dirichlet spaces				
2:45-3:10	<b>Coffee Break</b>				
	<b>Room 126</b> Chair:	<b>Room 112</b> Chair:	<b>Room 113</b> Chair:	<b>Room 115</b> Chair:	
3:10-3:40	<b>Laura De Carli</b> Three problems on exponential bases	<b>Qiang Wu</b> Learning theory and distributed kernel regression	<b>Myung-Sin Song</b> Markov chains and generalized wavelet multiresolutions	<b>Eddy Kwessi</b> Characterization of lacunary functions in weighted Bergman-Besov-Lipschitz spaces	
3:45-4:15	<b>Gino Velasco</b> Frame construction and approximation of functions via relevant sampling of the STFT	<b>Guo Xin</b> Centered reproducing kernels and their applications	<b>Yu Guang Wang</b> Tight framelets and fast framelet filter bank transforms on manifolds	<b>Davide Barbieri</b> A new approach to non square integrability for irreducible representations of semidirect products	
4:20-4:50	<b>Josiah Park</b> Minimizing the p-frame potential on unit balls	<b>Yu-Ping Wang</b> Group SLOPE model with application to genomic analysis	<b>Chenzhe Diao</b> Quasi-tight framelets with minimum number of generators and generalized matrix spectral factorization	<b>Niraj Shukla</b> Pairwise orthonormal frames generated by regular representations of LCA groups	