
Doctoral Degrees Conferred

2014–2015

ALABAMA

Auburn University (13)

DEPARTMENT OF MATHEMATICS AND STATISTICS

Bao, Feng, Efficient numerical algorithms for solving nonlinear filtering problems

Bragan, Kelly, Topics in edge-regular graphs

Brauss, Daniel, Implementation of a finite element method for the velocity-current magnetohydrodynamics equations

Brice, Daniel, On derivations of parabolic subalgebras of reductive Lie algebras

Chaffee, Joseph, 3-cycle systems and structure within graph decompositions

Chase, Timothy, Monotonic covering properties

Clontz, Steven, Applications of limited information strategies for topological games

Erzurumluoglu, Araz, Fair factorizations and fair holey factorizations with two associate classes and prescribed regularity

Hammer, James, Factor pair Latin squares
Nguelifack, Brice, Generalized signed-rank estimator for nonlinear models with multidimensional indices and two-phase linear models

Rawal, Nar, Principal eigenvalue theory for time periodic nonlocal dispersal operations and applications

Tadesse, Dawit, High-dimensional classification methods for sparse data and their applications in text and data mining

Xie, Xiaoxia, Nonlocal dispersal equations and convergence to random dispersal equations

University of Alabama (6)

DEPARTMENT OF MATHEMATICS

Banjade, Debendra, Wolff's ideal problem in the multiplier algebra on Dirichlet space

Duong, Nguyen, Twisting bordered Khovanov homology

Shahmurov, Rishad, Linear and nonlinear Rayleigh-Bénard convection in absence of horizontal boundaries

Song, Yuanyuan, Stability analysis of a bilayer coating a cylindrical tube

Tian, Wufeng, Fast alternating direction implicit schemes for geometric flow equations and nonlinear Poisson equations in biomolecular solvation analysis

Ying, Mengyi, Interval method for special constrained global optimization problems

University of Alabama at Birmingham (10)

DEPARTMENT OF BIOSTATISTICS

George, Brandon, A spatiotemporal model for repeated imaging data

Li, Peng, The small sample inferences of cluster-randomized trials

Loop, Matthew, Spatial analysis of hypertension prevalence using a large US cohort

Merrill, Peter, Non-compliance in clinical trials: The perils of statistical methods

Ranjan, Ashutosh, Power issues and internal pilot design in cluster-randomized trials with unequal cluster sizes

Salter, Amber, Practical extensions of the continual reassessment method

Tripathi, Arvind, Count models with multiple inflations

Wang, Guoqiao, An evaluation of sample size re-estimation adaptive designs and delayed-start designs for Alzheimer's disease

DEPARTMENT OF MATHEMATICS

Fadl Allah, Alzaki, Elliptic equations and systems with nonlinear boundary conditions

Muthoka, Terrence, American options and semilinear parabolic partial differential equations in weighted Sobolev spaces

University of Alabama-Huntsville (1)

DEPARTMENT OF MATHEMATICAL SCIENCES

Albashaireh, Reem, Traveling wave solutions of a chemotaxis model: Existence and stability

ARIZONA

Arizona State University (11)

MATHEMATICS, COMPUTATIONAL AND MODELING SCIENCES

Bliss, Nadya, Statistical signal processing for graphs

SCHOOL OF MATHEMATICAL AND STATISTICAL SCIENCES

Alvarez, Roberto, A two-strain spatiotemporal mathematical model of cancer with free boundary condition

Everett, Rebecca, Applications of the Droop cell quota model to data based cancer growth and treatment models

Holeva, Thomas, A kinetic approach to anomalous diffusion in biological trapping regions

Packer, Aaron, Cell quota based population models and their applications

Peace, Angela, Stoichiometric producer-grazer models incorporating the effects of excess food-nutrient content on grazer dynamics

Robinson, Benjamin, Operator-valued frames associated with measure spaces

Temkit, M'hamed, Experimental designs for generalized linear models and functional magnetic resonance imaging

Wang, Ran, On choosability and paintability of graphs

Zhou, Yuqin, Mathematical and statistical insights in evaluating state dependent effectiveness of HIV prevention interventions

Zinzer, Scott, One- and two-variable p -adic measures in Iwasawa theory

The above list contains the names and thesis titles of recipients of doctoral degrees in the mathematical sciences (July 1, 2014, to June 30, 2015) reported in the 2016 Annual Survey of the Mathematical Sciences by 197 departments in 143 universities in the United States. Each entry

contains the name of the recipient and the thesis title. The number in parentheses following the name of the university is the number of degrees listed for that university.

University of Arizona (15)

DEPARTMENT OF MATHEMATICS

Blackburn, Chantel, Mathematics according to whom? Two elementary teachers and their encounters with the mathematical horizon

Hinkel, Dustin, Constructing simultaneous Diophantine approximations of certain cubic numbers

Jiang, Jianping, Random walks and their scaling limits

Lafferty, Matthew, Eichler-Shimura cohomology groups and the Iwasawa main conjecture

Maienschein, Thomas, Desingularizing the boundary of the moduli space of genus one stable quotients

Powell, Kevin, Modular symbols modulo Eisenstein ideals for Bianchi spaces

Prasad, Priya, Connection, motivation, and alignment: Exploring the effects of content-based mathematics professional development

Todd, George, Linear relations between multizeta values

Waters, Patrick, Combinatorics of the Hermitian 1-matrix model

PROGRAM IN APPLIED MATHEMATICS

Birrell, Jeremiah, Non-equilibrium aspects of relic neutrinos: From freeze-out to the present day

McDaniel, Austin, The effects of time delay on noisy systems

Rosenthal, William Steven, Data assimilation in systems with strong signal features

Whalen, Patrick, Full field propagation models and methods for extreme nonlinear optics

STATISTICS GIDP

Kim, Hyeonju, Probabilities of ruin in economics and insurance under light and heavy-tailed distributions

Sohn, Michael, Novel computational and statistical approaches in metagenomic studies

ARKANSAS

University of Arkansas at Fayetteville (1)

DEPARTMENT OF MATHEMATICAL SCIENCES

Wanjohi, Richard, Online detection of outliers and structural breaks using sequential Monte Carlo Methods

CALIFORNIA

California Institute of Technology (9)

DEPARTMENT OF COMPUTING AND MATHEMATICAL SCIENCES

Cubillos, Max, General-domain compressible Navier-Stokes solvers exhibiting quasi-unconditional stability and high-order accuracy in space and time

Mason, Gemma, Full and model-reduced structure-preserving simulation of incompressible fluids

DEPARTMENT OF MATHEMATICS

Chiriac, Liubomir, Special Frobenius traces in Galois representations

Dawra, Nakul, On the link Floer homology of L -space links

Elliot, Ross, Topological strings, double affine Hecke algebras, and exceptional knot homology

Fan, Sin Tsun Edward, On the construction of higher étale regulators

Kasatkin, Victor, Some constructions related to noncommutative tori, Fredholm modules and the Beilinson-Bloch regulator

Linghu, Daiqi, Chains of non-regular de Branges spaces

Skinner, Brian, Logarithmic potential theory on Riemann surfaces

Claremont Graduate University (10)

INSTITUTE OF MATHEMATICAL SCIENCES

Hallett, Melodie, Novel random forest and variable importance methods for correlated survival data, with applications to tooth prognosis

Heckman, David, Variations on Markov chain Monte Carlo Methods: Continuous and discrete optimization of scheduling problems

Liu, Zheng, A bond option pricing formula in the extended CIR model

Lyons, Daniel, Dynamics and bifurcations in coupled bistable systems with applications to engineering devices

Najera Chesler, Aisha, Non-linear analysis and modeling of FHR and ECOG: Predicting fetal distress in labor

Sanchez, Eduardo, Mimetic finite differences and parallel computing to stimulate carbon dioxide subsurface mass transport

Suarez Solano, Jean, Regularization of singular sources for PSIC computations of particle-laden flows with shocks

Sun, Xun, On the geometry of cyclic and permutation invariant lattices

Wang, Wei, Boosting performance and endurance of flash-based storage systems: From embedded systems to enterprise servers

Xu, Shujing, Effects of history and lift force on particle trajectories in oscillatory rotating fluids

Naval Postgraduate School (1)

DEPARTMENT OF APPLIED MATHEMATICS

Boucher, Randy, Galerkin optimal control

Stanford University (10)

DEPARTMENT OF MATHEMATICS

Bernstein, Megan Maria, Random walks on the symmetric group, likelihood orders, and involutions

Henderson, Christopher Kling, Propagation phenomena in reaction advection diffusion equations

Katshelson, Vitaly, Diffraction of elastic waves by edges

Kim, Seung Ki, On the shape of a high dimensional random lattice

Lin, Yuncheng, On higher q, t Catalan numbers

Pang, Chung Yin Amy, Hopf algebras and Markov chains

Pardon, John Vincent, A new construction of virtual fundamental cycles in symplectic geometry

Sapir, Jenya Markovna, Non-simple geodesics on surfaces

Shao, Xuancheng, Dichotomy between structure and randomness in combinatorial number theory

Yang, Haizhao, Oscillatory data analysis and fast algorithms for integral operators

University of California, Berkeley (38)

DEPARTMENT OF MATHEMATICS

Achinger, Piotr, $K(\pi, 1)$ spaces in algebraic geometry

Beal, Khalilah, Viscosity solution methods in risk analysis

Berger, Emily, Probabilistic methods for single individual haplotype reconstruction

Chih, Ellen, Indivisible characteristics of recursively enumerable sets

Galkowski, Jeffrey, Distribution of resonances in scattering by thin barriers

Haberman, Boaz, Inverse problems with rough data

Harris, Kelley, Inference of population history and mutation biology from human genetic variation

Harrop Griffiths, Benjamin, Quasilinear dynamics of KdV-type equations

Hilaire, Christian, The Ricci flow on Riemannian groupoids

Honigs, Katrina, Derived equivalent varieties and their zeta functions

Jin, Long, Scattering resources for convex obstacles

Jin, Xin, Symplectic approaches in geometric representation theory

Kalman, Adam, Newton polytopes of cluster variables

Lanoue, Daniel, The metric coalescent

Lee, Heather, Homological mirror symmetry for open Riemann surfaces from pair-of-pants decompositions

Merberg, Adam, Noncommutative generalized Brownian motions with multiple processes

Morrison, Ralph, Tropical and non-Archimedean curves

Pejic, Michael, Quantum Bayesian networks with application to problems displaying Parrondo's paradox

Peterson, Eric, Cotangent spectra and the determinantal sphere

Preskill, Benjamin, The jump splice method for elliptic interface problems and the incompressible Navier-Stokes equations

Rosen, Zvi, Algebraic matroids in applications

Sylvan, Zachary, On partially warped Fukuya categories

Tsou, Benjamin, Eigenvalue distributions of symmetric group representations

Vu, Thanh, Combinatorial patterns in syzygies

Wang, Luming, Discontinuous Galerkin methods on moving domains with large deformations

Wayman, Eric, A skew-product decomposition on a manifold equipped with a group action, a Lorentz model with variable density in a conservative force field, and reconstruction of a manifold from the intrinsic metric of an associated Markov chain

Zhang, Te, Weak convergence and rapidly oscillating pendula

DEPARTMENT OF STATISTICS

Broderick, Tamara, Clusters and features from combinatorial stochastic processes

Li, Hongwei, Theoretical analysis and efficient algorithms for crowdsourcing

Lopes, Miles, Some inference problems in high-dimensional linear models

Racz, Miklos, Influences in voting and growing networks

Ruddy, Sean, Shrinkage of dispersion parameters in the double exponential family of distributions, with applications to genomic sequencing

BIOSTATISTICS

Balzer, Laura, Design and analysis of cluster randomized trials with application to HIV prevention and treatment

Boley, Nathan, Methods for the analysis of high throughput sequencing data

LeDell, Erin, Scalable ensemble learning and computationally efficient variance estimation

Lendle, Samuel, Targeted minimum loss based estimation: Applications and extensions in causal inference and big data

Stoiber, Marcus, Biological networks: Dynamics, mechanisms and responses

Zheng, Wenjing, Semiparametric and robust methods for complex parameters in causal inference

University of California, Davis (16)

DEPARTMENT OF MATHEMATICS

Lewis, Owen, Mathematical investigation of hydrodynamic contributions to amoeboid cell motility in physarum polycephalum

Li, Binglin, Towards a theory of Abel-Jacobi maps and limit linear series for curves of compact types

Lu, Steven, No quantum Brooks' theorem

Scrimshaw, Travis, Crystals and rigged configurations

Tavernetti, William, Modeling and simulation of thermal ignition, flame fronts, reactive flows and transonic combustion

Waagen, Alexander, Phase transitions on static and evolving networks: Effect of competition, zealotry, and growth

Watson, Richard, The structure of transient memory in a simple model of inhibitory neural feedback

Wertz, Tim, Localized operators and eigenvector localization

DEPARTMENT OF STATISTICS

Becker, Gabriel, Rethinking dynamic documents for data analytic research

Ganguly, Apratim, Applications and theoretical properties of local geometry based structure learning methods in Gaussian graphical models

He, Jinjiang, Functional correlations to quantify functional connectivity in brain imaging

Lai, Chu Shing (Randy), Generalized fiducial inference and its applications

Melcon, Erin, Penalty parameter selection in generalized linear models and linear mixed models

Udaltsova, Irina, Bayesian estimation of $\log(N > S) - \log S$

Wong, Ka Wai (Raymond), Fiber direction estimation in diffusion MRI

Zhang, Xiaoke, A unified theory and a time-varying additive model for functional and longitudinal data

University of California, Irvine (10)

DEPARTMENT OF MATHEMATICS

Eskew, Monroe, Measurability properties on small cardinals

Forero Cuervo, Andres, Consistency strength of stationary catching

Hill, Joshua, On calculating the cardinality of the value set of a polynomial (and some related problems)

Keti, Matt, Reed-Solomon codes and the deep hole problem

Konstorum, Anna, Mathematical modeling of tumor-microenvironment dynamics

Liu, Hsiao-Fan, Geometric curve flows

Rische, Jacquelyn, Mathematical modeling of language learning

Smith, Luke, Refining multivariate value set bounds

Yan, Huaming, Mathematical modeling of branching morphogenesis and vascular tumor growth

Zou, Changjian, Inverse problems in acoustic and electromagnetic scattering

University of California, Los Angeles (33)

DEPARTMENT OF BIostatistics, FIELDING SCHOOL OF PUBLIC HEALTH

Boren, David, Agent-based modeling for HIV prevention

Fischer, Heidi Jean, Statistical methods for ultrafine particle distributions

Harrell, Lauren, Analysis strategies for planned missing data in health sciences and education research

Konikoff, Jacob, Cross-sectional HIV incidence estimation: Techniques and challenges

Qiu, Jiaheng, Finding optimal experimental designs for models in biomedical studies via particle swarm

Rizzo Varela, Shemra, Uncertainty in meta-analysis: Bridging the divide between ideal and available extracted data

DEPARTMENT OF MATHEMATICS

Benatar, Jacques, The existence of small prime gaps in subsets of the integers

Bhaskar, Siddharth, Recursion versus tail recursion over abstract structures

Burungale, Ashay, On the non-triviality of arithmetic invariants modulo p

Davis, Damek, On the design and analysis of operator-splitting schemes

Denomme, Robert, Character formulas for 2-Lie algebras

Feldman, William, Asymptotic behavior of nonlinear PDE: Dynamic stability of a droplet model and boundary data homogenization

Gan, Wenying, Several problems in extremal combinatorics

Guan, Feng, Affine structure on the Teichmüller spaces and period maps for Calabi-Yau manifolds

Hachtman, Sherwood, Calibrating determinacy strength in Borel hierarchies

Hu, Huiyi, Graph based models for unsupervised high dimensional data clustering and network analysis

Kim, Sunjin, Average of the first invariant factor of the reductions of the Abelian varieties of CM type

Krause, Benjamin, Some results in pointwise ergodic theory

Leary, Brian, On maximal amenable subalgebras of amalgamated free product von Neumann algebras

Liu, Yajing, Applications of the link surgery formula in Heegaard Floer homology

Mackey, Alan, Part I: Steady states in two-species particle aggregation; Part II: Sparse representations for multiscale PDE

Malyshev, Anton, Combinatorics of finitely generated groups

Merkurjev, Ekaterina, Variational and PDE-based methods for big data analysis, classification and image processing using graphs

Miner, Samuel, Limit shapes of restricted permutations

Nelson, Brent, Non-tracial free transport and applications

O'Connor, Daniel, Primal-dual decomposition by operator splitting and applications to image deblurring

Radke, Eric, Net weighting methods and other novel approaches in variation-aware placement and sizing

Rajagopalan, Anand, Outlier eigenvalue fluctuations of perturbed iid matrices

Scaduto, Christopher, Instantons and odd Khovanov homology

Walsberg, Erik, Metric geometry in a tame setting

Wang, Yuting, Virtual node algorithms for simulating and cutting deformable solids

Xu, Samantha, Hamiltonian systems and Gibbs measures

Zipkin, Joseph, Mathematical models and methods for behavior in social networks: Urban crime, self-exciting interactions, and information spread

University of California, Riverside (9)

DEPARTMENT OF MATHEMATICS

Lunde, Mathew, Self-extensions and prime factorizations of representations of quantum affine algebras

Park, Jason, Random measure algebras under convolution

Safii, Soheil, Equivariant and isovariant function spaces

Thistlethwaite, Oliver, Seiberg-Witten invariants, Alexander polynomials, and fibred classes

Wand, Jeffrey, Demazure flags of local Weyl modules

West, Jacob, Higher Auslander-Reiten theory

DEPARTMENT OF STATISTICS

Crackel, Roberto, Likelihood free inference for a flexible class of bivariate beta distributions

Xiao, Zhen, Parameter estimation in differential equation based models

Zheng, Zongpeng (Patrick), Projection, search, and optimality in factorial experiments

University of California, San Diego (15)

DEPARTMENT OF MATHEMATICS

Cheng, Shi, Analysis and numerical treatment of elliptic equations with stochastic data

Compeau, Phillip, Scalable online algorithmic biology education and DCJ-Indel sorting

Deotte, Chris, Domain partitioning methods for elliptic partial differential equations

Hennig, Johanna, Locally finite dimensional Lie algebras

Kasa, Michael, Toward Gromov-Witten invariants relatively coherent logarithmic schemes

Kempton, Mark, High dimensional spectral graph theory and non-backtracking random walks on graphs

Lobue Tiefenbruck, Janine, Combinatorial properties of quasi-symmetric Schur functions and generalized Demazure atoms

Louie, Janelle, Classification of convex ancient solutions to curve shortening flow on the sphere

Meng, Wang, On the detection of sparse mixtures

Parks, Helen, Structural approaches to large-scale systems: Variational integrators for interconnected Lagrange-Dirac systems and structured model reduction on Lie groups

Shustrova, Anna, Primal-dual interior methods for quadratic programming

Tiee, Christopher, Computation and visualization of geometric partial differential equations

Wen, Jiayi, Mathematical modeling and computational methods for electrostatic interactions with applications to biological molecules

Wilson, Andrew, Generalized shuffle conjectures for the Garsia-Haiman delta operator

Zimmermann, David, Logarithmic Sobolev inequalities for Gaussian convolutions of compactly supported measures

University of California, Santa Barbara (14)

DEPARTMENT OF MATHEMATICS

Ackermann, Robert, On pseudo-Anosov maps, symplectic, Perron-Frobenius matrices, and compression bodies

Chapman, Kyle, An ergodic algorithm for sampling equilateral knots with thickness

Jonov, Boyan, Longtime behavior of small solutions to viscous perturbations of nonlinear hyperbolic systems in 3-D

Leitner, Arielle, Limits under conjugacy of the diagonal Cartan group in $SL_n(\mathbb{R})$

Leyton Chisholm, Elizabeth, Braid groups and Euclidean simplices

Ream, Robert, Index estimates and existence of minimal surfaces in manifolds with controlled curvature

Salazar, Daniel, Modeling and computation of immersed, flexible boundaries in complex fluids

DEPARTMENT OF STATISTICS AND APPLIED PROBABILITY

Chiu, Chi-Yang, Nonparametric mixed-effects density regression

Fahham Saporito, Yuri, Topics on functional Itô calculus and multiscale stochastic volatility modeling

Hancock, David, Investigating optimal investment problems for portfolios of cointegrated assets, with transaction costs

Lin, Junjing, Some contributions to non-parametric Bayesian methods

Lu, Chunhsiung, Stochastic filtering problem with financial application to high frequency trading

Sheinson, Michael, Sequential Monte Carlo methods: Applications to disease surveillance and fMRI data

Swenson, Julianne, Contributions to Bayesian statistics vector autoregressive time series, instrumental variables, recommendation systems

University of California, Santa Cruz (10)

APPLIED MATHEMATICS AND STATISTICS DEPARTMENT

Chesi, Simone, Attitude control of nanosatellite using shifting masses

DeYoreo, Maria, A Bayesian framework for fully nonparametric ordinal regression

Phelps, Christopher, Computational optimal control of nonlinear systems with parameter uncertainty

Richardson, Robert, Flexible integro-differential equations for Bayesian modeling of spatio-temporal data

Walton, Claire, The design and implementation of motion planning problems given parameter uncertainty

Xiao, Sai, Bayesian non-parametric modeling for some classes of temporal point processes

DEPARTMENT OF MATHEMATICS

Goren, Yusuf, Counting periodic orbits: Conley conjecture for Lagrangian correspondences and resonance relations for closed Reeb orbits

Owen, Mitchell, Families of half-integer weight Eisenstein series

Tabing, Felicia, String homology and Lie algebra structures

Yuan, Wei, The geometry of vacuum static space and deformations of scalar curvature

University of Southern California (12)

DEPARTMENT OF MATHEMATICS

Bessam, Diogo, Large deviations rates in a Gaussian setting and related topics

Daley, Timothy, Non-parametric models for large capture-recapture experiments with applications to DNA sequencing

Ekren, Ibrahim, Path-dependent partial differential equations and related topics

Islak, Umit, Concentration inequalities with couplings from Stein's method

Newman, Burton, Growth of torsion in quadratic extensions of quadratic cyclotomic fields

Pei, Yuan, Certain regularity problems in fluid dynamics

Sokolov, Grigory, Multi-population optimal change-point detection

Tian, Yin, Categorification of $\mathfrak{sl}(1, 1)$ via contact topology

Timmer, Joseph, Frobenius-Schur indicators of Hopf algebras arising from factorizations of the symmetric group

Warner, Harry Jared, Springer isomorphisms and the variety of elementary subalgebras

Zheng, Zemin, Feature selection and interaction screening in high-dimensional modeling

Zhuo, Jia, Probabilistic numerical methods for fully nonlinear PDEs and related topics

COLORADO

Colorado School of Mines (2)

DEPARTMENT OF APPLIED MATHEMATICS AND STATISTICS

Nealy, Jennifer, A study of normal mode solutions for seismo-acoustic propagation scenarios

Zaharatos, Brian, Statistical modeling of photovoltaic device performance

Colorado State University (13)

DEPARTMENT OF MATHEMATICS

Adkins, Melissa, Modeling local pattern formation on membrane surfaces using non-local interactions

Freese, Hilary, Abelian surfaces with real multiplication over finite fields

Hughes, Justin, Group action on neighborhood complexes of Cayley graphs

Lane-Harvard, Elizabeth, Strongly regular graphs from large arcs

Miles, Eric, Bridgeland stability of line bundles on surfaces

Motta, Francis, Optimally topologically transitive orbits, complex Hadamard matrices and an ion bombardment

Osnaqq, Silvia, Low rank representations of matrices using nuclear norm heuristics

Previte, Corrine, The \mathcal{D} -neighborhood complex of graphs

Schmidt, Eric, Number-theoretic properties of the binomial distribution with applications in arithmetic geometry

Schwickerath, Anthony, Linear models, signal detection, and the Grassmann manifold

Zhang, Chuan, Storing cycles in Hopfield-type neural networks

DEPARTMENT OF STATISTICS

Bugbee, Bruce, Semiparametric regression in the presence of complex variance structures arising from small angle x-ray scattering data

Herndon, Wade, Testing and adjusting for informative sampling in survey data

University of Colorado, Boulder (13)

DEPARTMENT OF APPLIED MATHEMATICS

Appelhans, David, Trading computation for communication: A low communication algorithm for the parallel solution of PDEs using range decomposition, nested iteration, and adaptive mesh refinement

Brutz, Michael, Mathematical modelling and analysis of several diffusive processes

Chen, Yuanting, Bayesian semi-parametric modeling of time-to-event data

Hao, Sijia, Numerical methods for solving linear elliptic PDEs: Direct solvers and high order accurate discretizations

Keck, Dustin, Aggregation dynamics: Numerical approximations, inverse problems, and generalized sensitivity

Leibs, Christopher, First-order systems least-squares finite element methods and nested iteration for electromagnetic two-fluid kinetic-based plasma models

Monnig, Nathan, From nonlinear embedding to graph distances: A spectral perspective

Romero, Henry, Fundamental limits of network communication with general message sets: A combinatorial approach

Sirsubtawee, Sekson, Stability and bifurcations of a piecewise-smooth elastoplastic inverted pendulum model: Towards an understanding of dynamics of buildings under earthquake-type forcing

DEPARTMENT OF MATHEMATICS

Davison, Trubee, Generalizing the Kantorovich metric to projection-valued measures: With an application to iterated function systems

Hower, John, A global symbol for the b -calculus on manifolds with boundary

Migler, Joseph, Determinants in K -theory and operator algebras

Zhang, Liang, Problems concerning spatial branching particle systems with interaction

University of Colorado, Denver (3)

DEPARTMENT OF MATHEMATICAL AND STATISTICAL SCIENCES

DeOrsey, Philip, Hyperovals and cyclo-tomic sets in $AG(2, q)$

Diemensch, Jennifer, Three problems in structural and extremal graph theory

Kondratenko, Volodymyr, Efficient algorithms for wildland fire simulation

University of Denver (2)

DEPARTMENT OF MATHEMATICS

Aboras, Mouna, Dihedral-like constructions of automorphic loops

Cardona, Riquelmi, The finite embeddability property for some noncommutative knotted varieties of RL and DRL

CONNECTICUT

University of Connecticut, Storrs (11)

DEPARTMENT OF MATHEMATICS

Hewa Katuwandeniyaage, Priyantha, Multivariate longitudinal data analysis or actuarial applications

Huan, Tingting, Traveling fronts to reaction diffusion equations with fractional Laplacians

Huang, Shujuan, Risk assessment and pricing for group health claims

K.M.G. Dias, Usahani, Longitudinal analysis of mortality risk factors for actuarial valuation

Martin, Caleb, Computability theory and ordered groups

Suggs, Jacob, On lowness for isomorphism as restricted to classes of structures

Zhao, Mingfeng, Traveling wave solutions to the Allen-Cahn equations with fractional Laplacians

Zheng, Wenyuan, Portfolio choice with life annuities under probability distortion

DEPARTMENT OF STATISTICS

Banerjee, Swarnali, Sequential fixed-accuracy confidence interval estimation methodologies in statistical ecology and related topics

Harrington, Patrick, Classification and multiple hypothesis testing in microarray and RNA-Seq experiments

Zhang, Danjie, Model assessment in joint modeling of longitudinal and survival data with applications to cancer clinical trials

Wesleyan University (2)

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

Smith, Brett, On minimality of planar graphs with respect to treewidth

Valenzuela, Gabriel, Homological algebra of complete and torsion modules

Yale University (11)

BIOSTATISTICS DIVISION

Gilani, Owais, Spatiotemporal calibration and resolution refinement of output from deterministic models

DEPARTMENT OF MATHEMATICS

- Constantin, Sarah*, Diffusion harmonics and dual geometry on Carnot manifolds
Huang, Shimmyih, An improvement to Zarembo's conjecture
Kimport, Susanna, Quantum modular forms, mock modular forms, and partial theta functions
Leeb, William, Topics in metric approximation
Len, Yoav, Tropical Brill-Noether theory
Munoz, Francisco, The classification of associated varieties of some generalized Harish-Chandra modules
Tarik, Aougab, Effectivizing the geometry of the curve complex

DEPARTMENT OF STATISTICS

- Ren, Zhao*, Structured covariance and precision matrices estimation: Toeplitz covariance and Gaussian graphical model
Yang, Xiao, Compression and predictive distributions for large alphabets
Ye, Saier, Multivariate regression with block-structured predictors

DELAWARE

Delaware State University (4)

DEPARTMENT OF MATHEMATICAL SCIENCES

- Ajayi, Adonis*, Local mesh refinement techniques for ground penetrating radar
Liu, Yuhong, UWB radar signal detection and imaging
Sanchez, Polina, Dynamics of shallow water waves with spatio-temporal dispersion on Rosenau-KDV-RLW equation with power law nonlinearity
Savescu, Michelle, Optical soliton perturbation with dual dispersion

University of Delaware (12)

DEPARTMENT OF MATHEMATICAL SCIENCES

- Emerick, Brooks*, Modeling molecular and tissue dynamics in the human colonic crypt: An investigation into colon cancer development
Fang, Rui, Stochastic analysis of ant-based routing and probabilistic modeling of medium access control in wireless local area networks
He, Zhenyu, High order smoothed particle hydrodynamic methods for slightly compressible bounded flow
Jin, Shi, Gaussian processes: KL expansion, small ball probability and applications in time series models
Kodess, Aleksandr, Properties of some algebraically defined digraphs
Li, Longfei, Mathematical models and numerical methods for human tear film dynamics

- Shoushani, Michael*, Parameter recovery and transmission problems in poro-elastic media
Song, Yan, Numerical schemes for coarse-graining of stochastic lattice dynamics
Sun, Yu, Modeling and analyzing large swarms with covert leaders
Tang, Jiahua, Determining the twist of an optical fiber
Vermette, Jason, Spectral and combinatorial properties of friendship graphs, simplicial rook graphs, and extremal expanders
Zeng, Yun, Stochastic modeling of soft materials

DISTRICT OF COLUMBIA

George Washington University (5)

DEPARTMENT OF MATHEMATICS

- Hammarsten, Carl*, Decorated Heegaard diagrams and combinatorial Heegaard Floer homology
Marshall, Leah, Computability-theoretic properties of partial injections, trees, and nested equivalences
Savitsky, Thomas, Some problems on matroids and integer polymatroids
Shoup, David, Half disc stationary sets on the boundary of a binary inhibitory system
Wang, Jing, Homology of small categories and its applications

Howard University (1)

DEPARTMENT OF MATHEMATICS

- Erebholo, Francis*, Application of the disposition model to the analysis of longitudinal binary outcomes in the presence of incomplete data

FLORIDA

Florida Atlantic University (5)

DEPARTMENT OF MATHEMATICAL SCIENCES

- Adams, Ronald*, Curve shortening in second-order Lagrangian systems
Budhathoki, Parshuram, Elliptic curves: Identity-based signing and quantum arithmetic
Gottipati, Chenchu, Graph labeling and non-separating trees
Grigoriev, Stepan, General monotonicity, interpolation of operators and applications
Yang, Yang, Stability analysis for singularly perturbed systems with time-delays

Florida Institute of Technology (1)

DEPARTMENT OF MATHEMATICAL SCIENCES

- White, Ryan*, Random walks on random lattices and their applications

Florida State University (22)

DEPARTMENT OF MATHEMATICS

- Donahue, Matthew*, Modeling the role of biofilm formation in the development of plant diseases
Emanuello, John, Analysis of functions of split-complex, multicomplex, and split-quaternionic variables and their associated conformal geometries
Jemison, Matthew, An asymptotically preserving method for multiphase flow
Karabiyik, Tugba, A game-theoretic analysis of competition over indivisible resources
Kunwar, Vijay, Hypergeometric solutions of second order differential equations with rational function coefficients
Li, Xin, Myrberg's numerical uniformization
Nguyen, Nguyet Thi, Probabilistic methods in estimation and prediction of financial models
Sengul, Sevgi, Unveiling mechanisms for electrical activity patterns in neurons and pituitary cells using mathematical modeling and analysis
Shen, Yingyun, Mathematical models of dengue fever and measures to control it
Waller, Russell, Periodic pieces of pseudo-Anosov flows in graph manifolds
Wills, Anthony, Analysis of regularity and convergence of discretization methods for the stochastic heat equation forced by space-time white noise
Xu, Qiuping, Keeping pace with the times: Quantifying variations of newly emerging biological shape data
Zhu, Ming, Radically elementary stochastic summation with applications to finance

DEPARTMENT OF STATISTICS

- Galvis, Oliver*, Sparse factor auto-regression methodology for forecasting time series in high dimensions with very many predictors
Griffin, Felicia, An examination of the concept of frailty in the elderly
Jiang, He, The studies of joint sparsity pursuit of hierarchical variable selection and fused lasso
Martinez, Elvis, Practical methods for equivalence and non-inferiority studies with survival response
Rosenthal, Michael, Parametric and non-parametric spherical regression with diffeomorphisms

Tucker, James, Functional component analysis and regression using elastic methods

Wade, Henning, A metric for comparing densities underling sets of shapes

Xie, Qian, Tools for statistical analysis on shape spaces of three-dimensional objects

Zhang, Zhengwu, Geometric approaches for analysis of images, densities, and trajectories

University of Central Florida (6)

DEPARTMENT OF MATHEMATICS

Baxter, Mathew, Analytical solutions to nonlinear differential equations arising in physical problems

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Siple, Angela, Integral representations of positive linear functionals

Veras, Johann, Electrical conductivity imaging via boundary value problems for the 1-Laplacian

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Liu, Meng, Modeling and algorithms for compressive magnetic resonance image reconstruction

Patane, Frank, On representations by positive definite binary and ternary quadratic forms

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Zhang, Long, On security properties of random matrix masking

University of Florida College of Public Health (2)

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Cai, Zhuangyu, Conditional pseudo-likelihood and generalized linear mixed model methods to adjust for confounding due to cluster

He, Ying, On statistical inference of two adaptive clinical trial designs

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Chen, Jing, Nonlinear dynamics of some ecological and epidemiological models

Evans Lee, Kyle, On the configuration spaces of lens spaces

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University of South Florida (7)

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Lu, Xiaosun, Statistical modeling and prediction of HIV/AIDS prognosis: Bayesian analysis of nonlinear dynamic mixtures

DEPARTMENT OF MATHEMATICS AND STATISTICS

Burns, Jonathan, Recursive methods in number theory, combinatorial graph theory, and probability

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GEORGIA

Augusta University (2)

DEPARTMENT OF BIOSTATISTICS AND EPIDEMIOLOGY

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An, Qion, Models for statistical analysis of infectious disease data

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Georgia Institute of Technology (13)

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Georgia State University (3)

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Han, Jie, Perfect matchings, tilings and Hamilton cycles in hypergraphs
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Thompson, Bianca, Exceptional points in arithmetic dynamics

IDAHO

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Rose, Jason, A stochastic model of cancer progression: Mathematical analysis and biomedical implications

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Choi, Seokwoo, Quantile autoregression with censored data

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- Tapay, Andrew*, Some results in fluid mechanics using Littlewood-Paley theory
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Indiana University–Purdue University Indianapolis (2)

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- Acuna Valverde, Luis*, Heat trace and heat content asymptotics for Schrödinger operators of stable processes/fractional Laplacians
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- Kala, Vitezslav*, Density of self-dual automorphic representations of $GL_N(\mathbb{A}_{\mathbb{Q}})$

- Kim, Bumsik*, Functional inequalities and the curvature dimension inequality on totally geodesic foliations
- Kim, Jieun*, Mathematical approaches to food nutrient content estimation with a focus on phenylalanine
- Kim, Youngsu*, Quasi-Gorensteinness of extended Rees algebras
- Lee, Byeongho*, G -Frobenius manifolds
- Ma, Lina*, Spectral methods for PDE's in spherical domain
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- Mugo, Kevin*, Mod 4 Galois representations from elliptic curves, a Brauer-Severi variety and a Brauer type embedding problem
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- Qi, Xin*, Uncertainty quantification in scientific models
- Tsumura, Yu*, A 2-categorical extension of the Reshetikhin-Turaev theory
- Vogt Geisse, Katia*, Structured deterministic models applied to malaria and other endemic diseases
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- Han, Xiang (Sean)*, Divide and recombine: Autoregressive models and STL+
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- Huang, Yen-Ning*, Spatial marked point process: Model and inferences
- Law, Chi Wai*, A pure-jump market-making model for high-frequency trading
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- Sun, Wei*, Stability of machine learning algorithms

- Sun, Zhaonan*, Statistical calibration and differential gene expression analysis of RNA-Seq data
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Im, Jongho, Some methods for handling missing data in surveys

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Liu, Fanfang, Statistical methods in detecting differential expressed genes, analyzing insertion tolerance for genes and group selection for survival data

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Van Hala, Matthew, On empirical likelihood methods for irregularly located spatial data

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Ellingwood, Nathan, Methods for improving performance of particle tracking and image registration in computational lung modeling using multi-core CPUs and GPUs

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KANSAS

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Pigno, Vincent, Prime power exponential and character sums with explicit evaluations

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Sahtout, Mohammad, Improving the performance of the prediction analysis of microarrays algorithm via different thresholding methods and heteroscedastic modeling

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KENTUCKY

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Li, Yinglei, Genetic association testing of copy number variation

Wei, Shaoleng, Multi-state models for interval censored data with competing risk

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Louisiana Technology University (2)

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MARYLAND

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DEPARTMENT OF BIOSTATISTICS

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Han, Fang, Large-scale semiparametric inference for large, complex, and noisy datasets

Lum, Kirsten, Joint modeling of hierarchical data with application to prospective pregnancy studies

Sun, Yifei, Statistical methods for analyzing marker processes in the presence of a terminal event

Webb Vargas, Yenny, Causal inference methods for measurement error and mediation analysis

Wu, Zhenke, Statistical methods for individualized health with application to childhood pneumonia and health policies: Etiology, diagnosis, and intervention

Yang, Juemin, Statistical methods for brain imaging and genomic data analysis

Johns Hopkins University (11)

DEPARTMENT OF APPLIED MATHEMATICS AND STATISTICS

Chen, Li, Pattern recognition on random graphs

Chestnut, Stephen, Stream sketches, sampling, and sabotage

Shen, Cencheng, Matching and inference for multiple correlated data sets

Yang, Sitan, Micro-array based multiclass classification using relative expression analysis

DEPARTMENT OF MATHEMATICS

Jun, Jaiung, Algebraic geometry over semi-structures and hyper-structures of characteristic one

Karami, Arash, Zeros of random Reinhardt polynomials
McGonagle, Matthew, The Gaussian isoperimetric problem and the self-shrinkers of mean curvature flow
Ross, John, Rigidity results for lambda-hypersurfaces
Sun, Hongtan, Strichartz estimates for wave and Schrödinger equations on hyperbolic trapped domains
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Wang, Xing, Asymptotic behavior of spectrums for elliptic pseudo-differential operators

University of Maryland, Baltimore County (6)

DEPARTMENT OF MATHEMATICS AND STATISTICS

Choi, Sungwoo, Classification using the ROC curve analysis and testing non-equivalence
Guha, Nilabja, Bayesian estimation under shape restriction and some deconvolution problems
Huang, Xuan, An MPI-CUDA implementation of a model for calcium induced calcium release in a three-dimensional heart cell on a hybrid CPU/GPU cluster
Saraswat, Jyoti, Multigrid solution of distributed optimal control problems constrained by semilinear elliptic PDEs
Yang, Yang, Bayesian adaptive dose-finding methods in Phase I drug combination trials
Zhai, Shuyan, Tolerance limits and hypotheses tests for the comparison of dissolution profiles

University of Maryland, College Park (40)

DEPARTMENT OF MATHEMATICS

Cash, Brianna, Using domain-specific information in image processing
Chau, Marie, Stochastic simulation: Kkt & stochastic approximation methods and sensitivity analyses
Contreras Barraza, Fabian, Regularity of absolutely continuous invariant measures for piecewise expanding uni-modal maps
Dayaratna, Kevin, Contributions to Bayesian statistical modeling in public policy research
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MASSACHUSETTS

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DEPARTMENT OF MATHEMATICS

Haraway, Robert, Dehn paternity bounds and hyperbolicity tests
Phillips, Andrew, Moduli of CM false elliptic curves
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DEPARTMENT OF MATHEMATICS AND STATISTICS

Johnston, Ian, Hierarchical Bayesian models for genome-wide association studies
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DEPARTMENT OF BIostatISTICS

Bae, Harold, Understanding the genetic basis of complex polygenic traits through Bayesian model selection of multiple genetic models and network modelling of family-based genetic data
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DEPARTMENT OF MATHEMATICS

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Svaldi, Roberto, Log geometry and extremal contractions
Trongsiriwat, Wuttisak, Combinatorics of permutation patterns, interlacing networks, and Schur functions
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Zhao, Yufei, Sparse regularity and relative Szemerédi theorems
Zhu, Xuwen, The eleven dimensional supergravity equations, resolutions and Lefschetz fiber metrics

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Andrews, Michael, The ν_1 -periodic part of the Adams spectral sequence at an odd prime

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Williams, Luke, Handlebody structures of rational balls

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Qi, Xin, Functional data analysis with applications
Sabzikar, Farzad, Tempered fractional Brownian motion
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Benson-Putnins, David, Volumes and integer points of multi-index transportation polytopes
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Fleming, Balin, Arc schemes in logarithmic algebraic geometry
Hoai, Becky, On symplectic invariants associated to Zoll manifolds
Huh, June, Rota's conjecture and positivity of algebraic cycles in toric varieties
Kinsey, Rafe, A priori estimates for two-dimensional water waves with angled crests
Leung, Kin Kwan, Complex geometric invariants associated to Zoll manifolds
Liu, Sijun, Functional equations involving Laurent polynomials and meromorphic functions, with applications to dynamics and Diophantine equations
Liu, Zhipeng, Discrete Toeplitz determinants and their applications
Ma, Linqun, The Frobenius endomorphism and multiplicities
Ngo, Hieu, Generalizations of the Lerch zeta function
Riolo, Maria, Topics in structured host-antagonist interactions
Seward, Brandon, Krieger's finite generator theorem for ergodic actions of countable groups
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Wootters, Mary, Any errors in this dissertation are probably fixable: Topics in probability and error correcting codes

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Zhou, Zhou, Topics in optimal stopping and fundamental theorem of asset pricing

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DEPARTMENT OF STATISTICS

Basu, Sumanta, Modeling and estimation of high-dimensional vector autoregressions

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Wayne State University (3)

DEPARTMENT OF MATHEMATICS

Baran, Nicholas, On switching diffusions: The Feynman-Kac formula and near-optimal controls

Lam, Nguyen, Moser-Trudinger and Adams type inequalities and applications

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Western Michigan University (7)

DEPARTMENT OF MATHEMATICS

Johnston, Daniel, Edge colorings of graphs and their applications

Lumduanhom, Chira, Modular monochromatic colorings spectra and frames in graphs

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Schwass, James, Phantom maps, decomposability, and spaces meeting particular finiteness conditions

Smith, Dustin, Eliciting elementary school students' informal inferential reasoning through storytelling

Zumbrun, Christina, Secondary mathematics teachers' attitudes and beliefs toward statistics: Developing an initial profile

DEPARTMENT OF STATISTICS

Jiang, Haolai, Inference on differences in k means for data with excess zeros and detection limits

MINNESOTA

University of Minnesota–Twin Cities (23)

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Ma, Xiaoye, Network meta-analysis of diagnostic tests

Murray, Thomas, Hierarchical models that flexibly incorporate supplemental information for settings with unknown nonlinear functions

Wey, Andrew, Estimation of nuisance parameters in survival models

Zhang, Jing, Bayesian hierarchical methods for network meta-analysis

SCHOOL OF MATHEMATICS

Ali, Adil, Boundary-value problems on spaces of automorphic forms

Averina, Viktoria, A mathematical model of neurally-mediated angiotensin II-salt hypertension

Bashkirov, Denis, The BV formalism for homotopy Lie algebras

Benson, Joseph, Integrable planar curve flows and the vortex membrane flow in Euclidean 4-space using moving frames and the variational bicomplex

Campbell, Patrick, Dynamical implications of network statistics

Chen, Nai-Chia, Periodic brake orbits in the N -body problem

Csar, Sebastian, Root and weight semi-group rings for signed posets

Edman, Robert, Diameter and coherence of monotone path graphs

Hoyer-Leitzel, Alanna, Bifurcations and linear stability of families of relative equilibria with a dominant vortex

Jaramillo, Gabriela, Inhomogeneities in spatially extended pattern forming systems

Kim, Minsu, Thermomechanical model of gels

Schrier, Madeline, Barcode decoding in a camera-based scanner: Analysis and algorithms

Switala, Nicholas, Some invariants of nonsingular projective varieties and complete local rings

SCHOOL OF STATISTICS

Bezener, Martin, Bayesian spatiotemporal modeling using spatial hierarchical priors with applications to functional magnetic resonance imaging

Chen, Gang, Forecast combination for outlier protection and forecast combination under heavy tailed errors

Rolling, Craig, Estimation of conditional average treatment effects

Yan, Qi, Coherent pursuit and boosting learning

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MISSISSIPPI

Mississippi State University (2)

DEPARTMENT OF MATHEMATICS AND STATISTICS

Ballamoole, Snehalatha, Spectral properties of a class of integral operators on spaces of analytic functions

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DEPARTMENT OF MATHEMATICS

Lee, Byunghoon, Diagonals of tensor products of Banach lattices with bases

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DEPARTMENT OF MATHEMATICS

Jones, Corey, Time integration methods of fundamental solutions and approximate fundamental solutions for nonlinear elliptic partial differential equations

Monroe, Jeanette, Hybrid meshless method for numerical solution of partial differential equations

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DEPARTMENT OF MATHEMATICS AND STATISTICS

De Mel, Withanage Ajith, On some inferential problems with recurrent event models

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St Louis University (3)

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

Paullin, Katherine, Spun almost normal form

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Woodland, Lindsey, Frames and applications: Distribution of frame coefficients, integer frames and phase retrieval

DEPARTMENT OF STATISTICS

Cook, Tyler, Model evaluation and variable selection for interval-censored data

Cui, Shiqi, Bayesian analysis for detecting differentially expressed genes from RNA-Seq data

Ma, Ling, Semi-parametric regression analysis of interval-censored failure time data

Wang, Zhenyu, Bayesian non-linear methods for survival analysis and structural equation models

Yi, Min, A ballooned beta-logistic model

Zheng, Dan, Bayesian analysis of capture-recapture model and diagnostic test in clinical trials

Zhou, Qingning, Statistics analysis of bivariate interval-censored failure time data

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Meng, Jianfeng, Change point analysis of copy number variants using next generation sequencing data

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Van Der Walt, Maria, Wavelet analysis of non-stationary signals with applications

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Kapraun, Dustin, Cell proliferation models, CFSE-based flow cytometry data, and quantification of uncertainty

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