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-Archmidean 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 warpped 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, Sungjin, 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 nonparametric 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

Sirisubtawee, 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 cyclotomic sets in AG(2, q)

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

Kondratenko, Volodomyr, 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 Katuwandeniyage, 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, Shinnyih, An improvement to Zaremba'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 nonparametric 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

Ge, Lei, Calibration of option pricing in reproducing kernel Hilbert spaces

Krylov, Roman, Inversion of the broken ray transform

Martinenko, Eugeny, Functional data analysis and its application to cancer data

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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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

University of Miami (5)

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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

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MATHEMATICS AND COMPUTER SCIENCE DEPARTMENT

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HAWAII

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Department of Mathematics

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

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Purdue University (38)

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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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University of Kentucky (19)

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PROGRAM OF MATHEMATICS AND STATISTICS

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Choi, Sungwoo, Classification using the ROC curve analysis and testing non-equivalence

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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 1 drug combination trials

Zhai, Shuyan, Tolerance limits and hypotheses tests for the comparison of dissolution profiles

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DEPARTMENT OF MATHEMATICS

Cash,!Brianna,)Using)domain-specific information)in)image)processing)

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Contreras Barraza, Fabian, Regularity of absolutely continuous invariant mea-sures for piecewise expanding uni-modal maps

Dayaratna, Kevin, Contributions to Bayesian statistical modeling in public policy research

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

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Department of Statistics and Probability

Qi, Xin, Functional data analysis with applications

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Department of Mathematics

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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

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Wayne State University (3)

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

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Yang, Zhixin (Harriet), Stability and controls for stochastic dynamic systems

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

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

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MINNESOTA

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DIVISION OF BIOSTATISTICS, SCHOOL OF PUBLIC HEALTH

Ma, Xiaoye, Network meta-analysis of diagnostic tests

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

SCHOOL OF MATHEMATICS

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Csar, Sebastian, Root and weight semigroup rings for signed posets

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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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Yuan, Yiping, Statistical learning of high-dimensional directed acyclic graphical models

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Butler, Dagny, Analysis of classes of nonlinear eigenvalue problems on exterior domains

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

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St Louis University (3)

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Alvardo, Ryan, Topics in geometric analysis and harmonic analysis on spaces of homogeneous type

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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

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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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Du, Wenyu, Accurate and efficient numerical performance evaluation of generalized Shiryaev-Roberts procedure for quickest change-point

Li, Jinghao, Purity results on F-crystals

Sorcar, Gangotryi, Non-triviality of the fundamental group of the Teichmüller space of negatively curved metrics of a non-locally symmetric curved manifold

Tanusevski, Slobodan, Generalized Thompson groups

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Song, Xiaoyu, A new estimating equation approach for secondary trait analyses in genetic-control studies

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Bilina Falafala, Roseline, Mathematical modeling of insider trading

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Winter, Blake, Virtual, welded, and ribbon links in arbitrary dimensions

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Department of Biostatistics and Computational Biology

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Herman, Aaron, Positive root bounds and root separation bounds

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Lowman, Nicholas, Viscous fluid conduits as a prototypical nonlinear dispersive wave platform

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Ray, Chelsie, Complemented Leibniz algebras

Rohal, James, Connectivity in semi-algebraic sets

Scott, Jason, Fault detection in differential algebraic equations

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Thompson, Karmethia, Solving nonlinear constrained optimization time delay systems with a direct transcription approach

Wentworth, Mami, Verification techniques for parameter selection and Bayesian model calibration presented for an HIV model

Wentworth, Thomas, Leverage scores: Sensitivity and applications to randomized algorithms

Yang, Min, Local unitary equivalence of quantum computation

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Bhaumik, Prithwish, Bayesian estimation and uncertainty quantification in differential equation models

Coleman, Deidra, Advances in significance testing for cluster detection

Coles, Adrian, New approaches to conducting inference in nonlinear functional regression models with novel applications to copy number data

Jang, Woo Sung, Semiparametric Bayesian quantile regression

Lee, Hui-Jie, Advances in Bayesian inference of species divergence times

Li, Xiaoshan, Tensor based statistical models with applications in neuroimaging data analysis

Linn, Kristin, Interactive modeling techniques for non-smooth functionals in dynamic treatment regimes

Pomann, Gina-Maria, Statistical methods for magnetic resonance image analysis with applications to multiple sclerosis

Sahoo, Saswata, High dimensional methods in statistics and finance

Smith, Luke, Bayesian quantile regression in biostatistical applications

Talapatra, Kasturi, Space-filling exploratory experimental design (SEED)

Tidemann-Miller, Beth Ann, Statistical modeling of multivariate functional data that exhibit complex correlation structures

Usset, Joseph, Complex regression models for functional data

Xiao, Wei, Flexible methods and computation for model selection and optimal treatment learning

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Yoo, William, Sup-norm posterior convergence rates for regression models with application to estimating the location of function maximum

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Chen, Ting-Huei, Penalized estimation methods and their application in genomics and beyond

Cornea, Emil, Advanced biostatistical methods for curved and censored biomedical data

Dasgupta, Sayan, Non-parametric and semi-parametric methods for parsimonious statistical learning with complex data

Douglas, Christian, Statistical methods for assessing the effect of mortality on rates of change and variability in a longitudinal study of the elderly

Gouskova, Natalia, Analysis of complex time-to-event data

Hoberman, Steven, Response adaptive designs for highly successful treatments, randomness and relationship detection in clinical trials

Huang, Kuan-Chieh, Statistical methods for genetic and epigenetic association studies

Hyun, Noorie, Analysis of interval censored data using a longitudinal biomarker

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Rigdon, Joseph, Causal inference for binary data with interference

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Smith, Valerie, A marginalized two-part model for semicontinuous data

Tang, Zhengzheng, Association analysis of rare variants in sequencing studies

Wekheye, Kelley, Statistical methods for repeated measures in experimental gingivitis with adjustment for left truncation due to lower detection limits

Yin, Zhaoyu, Statistical analyses of high throughput genetics and genomics data

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Kechagias, Stefanos, Bivariate long-range dependent time series models with general phase

Miao, Di, Class-sensitive principal components analysis

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Shin, Sunyoung, Contributions to penalized estimation

Skwerer, Sean, Tree oriented data analysis

Sun, Zhankun, Priority scheduling of jobs with hidden types

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Abebe, Abraham, Positive solutions of nonlinear elliptic boundary value problems

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Batell, Mark, The half-factorial property in polynomial rings

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Wang, Meng, Family-based Bayesian LASSO for detecting association of rate haplotypes with common diseases

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