
Mathematics & Science Center
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Research Interests

Dynamical systems, isospectral transformations of multidimensional systems and networks, mathematical biology

Employment

Emory University, Atlanta, GA, USA
Visiting Assistant Professor Sep 2019 - now

Education

Georgia Institute of Technology, Atlanta, GA, USA
Ph.D. in Mathematics Aug 2019
Advisor: Leonid Bunimovich
Thesis: Topics in Dynamical Systems

Tsinghua University, Beijing, China
M.S. in Applied Mathematics Jul 2013
Advisor: Meirong Zhang
Thesis: Structure of Eigenvalues of Multi-point Boundary Value Problems of Second-Order Differential Equations

Tsinghua University, Beijing, China
B.S. in Hydraulic Engineering Jul 2010
Advisor: Fuqiang Tian
Thesis: Rainfall and Fractal Dimension of River Networks

Publications

1. Leonid Bunimovich, Longmei Shu, "Generalized Eigenvectors of Isospectral Transformations, Spectral Equivalence and Reconstruction of Original Networks", *Linear Algebra and its Applications*, 551(15)(2018)104-124
2. Leonid Bunimovich, Longmei Shu, "On Attractors of Isospectral Compressions of Networks", *Differential Equations and Dynamical Systems*, Springer, 2018, pp. 63-73

3. Leonid Bunimovich, Longmei Shu, "Local Immunodeficiency: Minimal Networks and Stability", *Mathematical Biosciences*, 310(2019)31-49
4. Leonid Bunimovich, Longmei Shu, "Dynamics of some basic cross-immunoreactivity networks", submitted
5. Leonid Bunimovich, Longmei Shu, "Local Immunodeficiency: Role of Neutral Viruses", *Bulletin of Mathematical Biology*, 82(140)(2020)

Presentations

1. "Generalized Eigenvectors of Isospectral Transformations and Spectral Equivalence", April 2018, Workshop on Dynamical Systems and Related Topics, University of Maryland, College Park, MD, USA
2. "Local Immunodeficiency: Minimal Network and Stability", August 2018, 7th Workshop on Computational Advances in Molecular Epidemiology, Washington, D.C.
3. "Attractors and Spectral Equivalence of Isospectral Transformations", April 2019, Workshop on Dynamical Systems and Related Topics, University of Maryland, College Park, MD, USA
4. "Local Immunodeficiency: Minimal Network and Stability", May 2019, SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA
5. "SIR Models", April 2020, COVID-19 Outbreak Math Modeling Contest, Emory University, Atlanta, GA, USA

Teaching Experience

1. Teaching Assistant, Calculus 3 and Differential Equations (recitations for ~30 students), Georgia Tech, 2014-2018
2. Instructor, Introduction to Multivariable Calculus (~60 students), Georgia Tech, 2018 Summer, 2019 Summer
3. Instructor, Calculus I, Emory University, 2019 Fall
4. Instructor, Differential Equations, Emory University, 2020 Spring & Fall
5. Instructor, Life Sciences Calculus II, Emory University, 2020 Fall

Honors

1. Certificate of Recognition from SIAM (Society for Industrial and Applied Mathematics) for organizing joint SIAM student conference April 2018 at Georgia Tech (Clemson+UAB+Emory+GaTech)
2. Sigma-Xi Best Phd Thesis Nominee (Math) 2019 Georgia Tech

Service

Referee for *Linear Algebra and its Applications*

October 29, 2020

Professional Association

SIAM Student Chapter President, Georgia Tech, 2018-2019