
36th Southeastern-Atlantic Regional Conference on Differential Equations
Florida Gulf Coast University, Fort Myers, FL.

CONFERENCE PROGRAM

SATURDAY, NOVEMBER 5, 2016

11:00am – 6:00pm	Registration	Atrium, Lutgert Hall
11:30am – 12:30pm	Lunch	Atrium, Lutgert Hall
12:45pm – 1:00pm	Conference Opens	Room 100 Marieb Hall
	Opening Remarks – Jaffar Ali	
	Welcome – Robert Gregerson, Dean, College of Arts & Sciences, FGCU	
1:00pm- 2:00pm	Plenary Lecture	Room 100 Marieb Hall
	<i>Crystalline and complex solutions to the vector Allen-Cahn equations</i>	
	Peter Bates , Michigan State University	
	Chair: Peng Feng	
2:00pm -2:20pm	Coffee Break	Atrium, Lutgert Hall

Contributed Session I

Session I-A		Room 1201 Lutgert Hall
2:20pm -2:40pm	Sougata Dhar	<i>Lyapunov-type inequalities with fractional integral boundary Conditions</i>
2:40pm –3:00pm	J. Diego Ramirez	<i>Existence of Minimal and Maximal Solutions to Riemann-Liouville fractional integro-differential IVP</i>
3:00pm-3:20pm	Jeffery Neugebauer	<i>Convolutions and Green's Functions for Fractional Boundary Value Problems</i>
3:20pm-3:40pm	Jeffery Lyons	<i>Positive Symmetric Solutions of a Second Order Boundary Value Problem</i>
Session I-B		Room 1202 Lutgert Hall
2:20pm -2:40pm	Yanqiu Guo	<i>Viscoelastic wave equations with supercritical Nonlinearities</i>
2:40pm-3:00pm	Jing Tian	<i>Study of the Chaotic vibration of High dimensional PDEs</i>
3:00pm-3:20pm	Ligang Sun	<i>Interactions of different shock waves and expansion waves</i>
3:20pm-3:40pm	Seonguk Kim	<i>Perturbation Formulas for Nonlinear Polyharmonic Equation with Periodic Potentials when $2l > n$</i>
Session I-C		Room 1203 Lutgert Hall
2:20pm -2:40pm	Tom Lewis	<i>Narrow-Stencil Finite Difference Methods for Approximating Viscosity Solutions of Hamilton-Jacobi-Bellman Equations</i>

2:40pm –3:00pm Cody Lorton *A Posteriori Error Estimates Applied to Unconditionally Stable IPDG Methods for the Helmholtz Equation*

3:00pm -3:20pm Marcella Noorman *Sensitivity Analysis in Poro-visco-Elastic Models*

3:20pm-3:40pm Shane Kepley *Rigorous Numerics for ODEs*

Session I-D

Room 1204 Lutgert Hall

2:20pm -2:40pm Buddhi Pantha *Early Host Pathogen Interaction in an Inhalational anthrax Infection*

2:40pm –3:00pm Hayriye Gulbudak *Heterogeneous Virus Strategies Promotes Coexistence in Virus-Microbe Systems*

3:00pm -3:20pm Mahya Aghaee *Optimal treatment and vaccination in an SIR Epidemiological Model with Time-varying Population*

3:20pm-3:40pm Imen Hassari *Backward Stochastic Differential Equations and Applications*

Session I-E

Room 100 Marieb Hall

2:20pm -2:40pm Morgan Schreffler *Solving an Approximate Mixed Problem by Layer Potentials*

2:40pm –3:00pm Dhruba Adhikari *Invariance of Domain for $A_C(S_+)$ Operators*

3:00pm -3:20pm Zachary Denton *Generalized Peano Existence and Resulting Monotone Method for Nonlinear Riemann-Liouville Fractional Differential equations*

3:20pm-3:40pm Gulsah Yeni *On Nonoscillatory Solutions of Four-dimensional Time-scale Systems*

3:40pm – 4:00pm **Coffee Break** Atrium, Lutgert Hall

Contributed Session II

Session II-A

Room 1201 Lutgert Hall

4:00pm -4:20pm Catherine Payne *Approximation of Linear Neutral Delay Differential Equations*

4:20pm - 4:40pm Youssef N Raffoul *Stability In Nonlinear Delay Volterra Integro-differential Systems*

4:40pm - 5:00pm Hasala Kankanamalage *Two equivalent Lyapunov-Krasovskii Descriptions of Output Stability for Delay Systems*

5:00pm-5:20pm Muhammad Islam *Volterra Equations and Asymptotic Periodicity*

Session II-B

Room 1202 Lutgert Hall

4:00pm -4:20pm Yi Hu *Sharp Condition on Global Well-posedness for Nonlinear Schroedinger Equations with Rotation*

4:20pm - 4:40pm Byungjae Son *Uniqueness results for classes of semipositone p -Laplacian problems*

4:40pm - 5:00pm	Quinn Morris	<i>Analysis of Steady States for Classes of Reaction-diffusion Equations with U-shaped Density Dependent Dispersal on the Boundary</i>	
5:00pm-5:20pm	Steven Derochers	<i>On the Semigroup Generator for the Total Linearization of a Hydro-Elasticity Model</i>	
Session II-C			Room 1203 Lutgert Hall
4:00pm -4:20pm	Selin Sariaydin	<i>Computing Reduced Order Models Using Stochastic Approach in Diffuse Optical Tomography</i>	
4:20pm - 4:40pm	Klajdi Sinani	<i>A Model Reduction Algorithm that Preserves the Structure of Dynamical Systems with Nonlinear Frequency Dependence</i>	
4:40pm - 5:00pm	Wesley Davis	<i>An Analysis of the Caputo Fractional Derivative Using the Laplace Transform</i>	
5:00pm-5:20pm	Sirani Perera	<i>Signal Flow Design of Fast DST Algorithms</i>	
Session II-D			Room 1204 Lutgert Hall
4:00pm -4:20pm	Roby Poteau	<i>Identification of Parameters in Mathematical Biology</i>	
4:20pm - 4:40pm	Cameron Browne	<i>Stability and Persistence in Multi-Epitope HIV-Immune Response Network Models</i>	
4:40pm - 5:00pm	Michael Sheppard	<i>On Stable Parameter Estimation for an ODE Constrained Optimization Problem in Epidemiology</i>	
5:00pm-5:20pm	Alexandra Smirnova	<i>On Stable Reconstruction of Disease Parameters by Reduced Iteratively Regularized Gauss-Newton Algorithm</i>	
Session II-E			Room 100 Marieb Hall
4:00pm -4:20pm	Ozkan Ozturk	<i>Classification Schemes of Nonoscillatory Solutions for two Dimensional Time Scale Systems</i>	
4:20pm - 4:40pm	Nasrin Sultana	<i>Rate of Convergence of Solutions of Linear Volterra Difference Equations</i>	
4:40pm - 5:00pm	Jeremy Mandelkern	<i>Solutions for Second Order Linear ODEs near Irregular Singular Points</i>	
5:00pm-5:20pm	Alex Stokolos	<i>Selected problems of non-linear dynamics</i>	
5:30pm-6:30pm	Plenary Lecture		Room 100 Marieb Hall
		<i>Free Boundary Value Problems Arising in Biology</i>	
	Avner Friedman , Ohio State University		
	Chair: Daniel Kern		
6:45pm - 8:00pm	Dinner		Room 111 Sugden 111

SUNDAY, NOVEMBER 6, 2016

7:00am – 11:00am	Registration	Atrium, Lutgert Hall
8:00am – 9:00am	Plenary Lecture	Marieb Hall 100
	<i>The Impact of Insect Aggregation and Dispersal on Disease Outbreaks in Insect-plant-virus Models</i>	
	Linda Allen , Texas Tech University	
	Chair: Menaka Navaratna	
9:00am – 9:20am	Coffee Break	

Contributed Session III

Session III-A		Room 1201 Lutgert Hall
9:20am – 9:40am	Edward Allen	<i>Stochastic Differential Equation Models for the Wear of Coins in Circulation</i>
9:40am – 10:00am	Susmita Sadhu	<i>Distribution of Recurrent Outbreaks in a Stochastic Bi-trophic Ecosystem</i>
10:00am – 10:20am	Mahbubur Rahman	<i>Wave Propagation in a Noisy System near a Saddle Node on a Limit Cycle Bifurcation</i>
10:20am – 10:40am	Kenneth I. Iwezulu	<i>Discrete and Continuous Operational Calculus in Real Time Stochastic Games</i>
Session III-B		Room 1202 Lutgert Hall
9:20am – 9:40am	Adam Prinskey	<i>Qualitative Properties of Solutions to Nonlinear Parabolic PDEs with Double Degenerate Fast Diffusion</i>
9:40am – 10:00am	Yuanwei Qi	<i>Traveling Wave Solutions of R-D Systems with Application in Pattern Formation and Chemical Waves</i>
10:00am – 10:20am	Haicheng Gu	<i>Applying the Fractional Diffusion Equation to Financial Forecasting</i>
10:20am – 10:40am	Kizza M. Nandyose	<i>Time Sensitive Functionals in Real Time</i>
Session III-C		Room 1203 Lutgert Hall
9:20am – 9:40am	Alexander Zuyev	<i>Attractors of nonlinear population balance equations with feedback control</i>
9:40am – 10:00am	Dimplekumar Chalishajar	<i>Controllability of Fractional Neutral Impulsive Integro-differential Equations in Banach spaces</i>

10:00am – 10:20am	Evan Cosgrove	<i>Optimal Control of the Coefficients in Second Order Parabolic Free Boundary Problems</i>
10:20am – 10:40am	Jonathan Goldfarb	<i>Frechet Differentiability in Besov Spaces in the Optimal Control of Parabolic Free Boundary Problems</i>

Session III-D

Room 1204 Lutgert Hall

9:20am – 9:40am	Taige Wang	<i>Shear Bandings of a Thixotropic Fluid Model</i>
9:40am – 10:00am	Yue Chen	<i>The Mathematics of Dispersion for Metamaterials</i>
10:00am – 10:20am	Eric Stachura	<i>Boundary Value Problems for the Anisotropic Maxwell System</i>
10:20am – 10:40am	H. Michael Allison	<i>Investigation of the use of Razumikhin functions to analyze the stability of NFDE solutions to the PEEC Model</i>

10:40am – 10:50am **Coffee Break**

Contributed Session IV

Session IV-A

Room 1201 Lutgert Hall

10:50am – 11:10am	Terry Anderson	<i>Pursuit in an Inverse Square Law Medium</i>
11:10am – 11:30am	Gnana B. Tenali	<i>Stability Results for Set Difference Equations</i>
11:30am – 11:50am	Najla Altwaijry	<i>Ergodic Convergence of the Double Backward Method for Monotone Operators</i>

Session IV-B

Room 1202 Lutgert Hall

10:50am – 11:10am	Jia Zhao	<i>On Energy-stable Schemes for Complex-valued Hydrodynamic Equations</i>
11:10am – 11:30am	Brent Young	<i>Landau Damping in Pseudo-Relativistic Plasmas</i>
11:30am – 11:50am	Stephanie Gamble	<i>Vibrational Energies of the Hydrogen Bonds of $H_3O_2^-$ and $H_5O_2^+$</i>

Session IV-C

Room 1203 Lutgert Hall

10:50am – 11:10am	Manal Badgaish	<i>Analysis and Simulation of a Coupled Nonlinear Fluid-structure Interaction Mathematical Model with applications to aneurysms</i>
11:10am – 11:30am	Josef Navratil	<i>Reaction-diffusion Equations with Non-differentiable Nonlinearities</i>
11:30am – 11:50am	Ilhame Amirali	<i>High-order Finite Difference Technique for Delay Pseudo-parabolic Equations</i>

Session IV-D

Room 1204 Lutgert Hall

10:50am – 11:10am	Jiayin Jin	<i>Invariant Manifolds of the Solitary Waves of the Supercritical gKDV equation</i>	
11:10am – 11:30am	Mathew Baxter	<i>A Method of Directly Defining the Inverse Mapping for Solutions of Coupled Systems of Nonlinear Differential Equations</i>	
11:30am – 11:50am	Martin Klaus	<i>Eigenvalue asymptotics for Zakharov-Shabat systems with long-range potentials.</i>	
11:50am – 12:00pm	Coffee Break		
12:00pm – 1:00pm	Plenary Lecture <i>Pseudospectral Methods in Optimal Control</i> William Hager , University of Florida Chair: Jaffar Ali		Room 100 Marieb Hall
1:00pm – 1:10pm	Closing Remarks		Room 100 Marieb Hall
1:10pm – 2:00pm	Lunch		Atrium, Lutgert Hall