
Program of the Sessions

Orlando, Florida, November 9–10, 2002

Saturday, November 9

Meeting Registration

7:30 AM – 4:30 PM Atrium, Business Administration

AMS Exhibit and Book Sale

7:30 AM – 4:30 PM Atrium, Business Administration

Special Session on Commutative Algebra, I

8:30 AM – 10:50 AM Room 122, Business Administration

Organizers: **Heath M. Martin**, University of Central Florida
Stephanie A. Fitchett, Florida Atlantic University

- 8:30AM (1) *Tools for studying resolutions of fat point ideals in the plane.*
Brian Harbourne*, University of Nebraska-Lincoln, **Sandeep Holay**, Southeast Community College, and **Stephanie Fitchett**, Florida Atlantic University (982-14-158)
- 9:00AM (2) *Free resolutions for multigraded modules: a generalization of Taylor's construction.*
H Charalambous* and **A Tchernev**, University at Albany, SUNY (982-13-185)
- 9:30AM (3) *Matroids and the Taylor resolution of a multigraded module.* Preliminary report.
Alexandre B Tchernev, University at Albany, SUNY (982-13-153)
- 10:00AM (4) *Linear growth property of Tor and Ext modules.* Preliminary report.
Yongwei Yao, MSRI (982-13-99)
- 10:30AM (5) *Koszul modules.*
Srikanth Iyengar*, University of Missouri, and **J Herzog**, University of Essen (982-13-230)

Special Session on Computational Mathematics, I

8:30 AM – 10:50 AM Room 146, Business Administration

Organizers: **Ricardo H. Nochetto**, University of Maryland
Bernardo Cockburn, University of Minnesota

- 8:30AM (6) *High Resolution Central Schemes for Nonlinear Advection Problems.*
Eitan Tadmor, University of Maryland College Park (982-65-203)
- 9:00AM (7) *The dual active set algorithm in control and optimization.*
William W. Hager, University of Florida (982-65-112)
- 9:30AM (8) *Discontinuous Finite Element Methods for Solving the Stokes and Navier-Stokes Equations.*
Vivette Girault, University Paris VI, **Beatrice M Riviere***, University of Pittsburgh, and **Mary F Wheeler**, The University of Texas at Austin (982-65-160)
- 10:00AM (9) *Mixed hp-DGFEM for incompressible fluid flow.*
Dominik Schoetza, University of Basel, Switzerland (982-65-110)
- 10:30AM (10) *Multi Domain WENO Finite Difference Method with Interpolation at Sub-domain Interfaces.*
Kurt Sebastian and **Chi-Wang Shu***, Brown University (982-65-163)

Special Session on Functional and Harmonic Analysis of Wavelets, Frames and their Applications, I

8:30 AM – 10:50 AM Room 121, Business Administration

Organizers: **Deguang Han**, University of Central Florida
Manos I. Papadakis, University of Houston

- 8:30AM (11) *Frames and Operators.* Preliminary report.
David Royal Larson, Texas A&M University (982-46-223)

The time limit for each contributed paper in the sessions is ten minutes. In the Special Sessions the time limit varies from session to session and within sessions. To maintain the schedule, time limits will be strictly enforced.

For papers with more than one author, an asterisk follows the name of the author who plans to present the paper at the meeting.

Papers flagged with a solid triangle (▶) have been designated by the author as being of possible interest to undergraduate students.

Abstracts of papers presented in the sessions at this meeting will be

found in Volume 23, Issue 4 of *Abstracts of papers presented to the American Mathematical Society*, ordered according to the numbers in parentheses following the listings. The middle two digits, e.g., 897-20-1136, refer to the Mathematical Reviews subject classification assigned by the individual author. Groups of papers for each subject are listed chronologically in the *Abstracts*. The last one to four digits, e.g., 897-20-1136, refer to the receipt number of the abstract; abstracts are further sorted by the receipt number within each classification.

- 9:00AM *Ellipsoidal Tight Frames.*
 (12) **Keri Kornelson***, Ken Dykema, Texas A&M University, **Dan Freeman**, Guilford College, **Dave Larson**, Texas A&M University, **Marc Ordower**, Randolph-Macon Woman's College, and **Eric Weber**, University of Wyoming (982-47-123)
- 9:30AM *Classical and quantum mechanical features of wavelets.*
 ► (13) **Palle E. T. Jorgensen**, University of Iowa (982-42-06)
- 10:00AM *Positive definite maps, representations and frames.*
 (14) **Dorin Ervin E Dutkay**, The University of Iowa (982-43-32)
- 10:30AM *Sizes of Wavelet Frames.* Preliminary report.
 (15) **Eric S Weber**, University of Wyoming (982-42-94)

Special Session on Graph Theory, I

- 8:30 AM – 10:50 AM **Room 225, Business Administration**
 Organizers: **Robert C. Brigham**, University of Central Florida
Cun-Quan Zhang, West Virginia University
Yue Zhao, University of Central Florida
- 8:30AM *The Laplacian Eigenvalues of Mixed Graphs.*
 (16) **Rong Luo***, Middle Tennessee State University, and **Xiao-Dong Zhang**, Shanghai Jiaotong University (982-05-74)
- 9:00AM *The Structure of Saturated Critical Blocks.*
 ► (17) **Donald A. Nelson**, Middle Tennessee State University (982-05-59)
- 9:30AM *The Second Neighborhood Conjecture and Cycles in Digraphs.*
 (18) **Guantao Chen**, Georgia State University (982-05-43)
- 10:00AM *Edge Proximity and Matching Extension in Planar Triangulations.*
 (19) **Robert E.L. Aldred**, University of Otago, and **Michael D. Plummer***, Vanderbilt University (982-05-45)
- 10:30AM *The 1-factorization conjecture.*
 (20) **Anthony A Hilton**, The University of Reading (982-05-162)

Special Session on Mathematical Neuroscience, I

- 8:30 AM – 10:20 AM **Room 116, Business Administration**
 Organizers: **Steve J. Cox**, Rice University
Richard Bertram, Florida State University
- 8:30AM *Mechanism of intrinsic bursting in CA1 pyramidal neurons.*
 ► (21) **David Golomb***, Dept. of Physiology, Ben-Gurion Univ., and **Yoel Yaari**, Dept. of Physiology, Hebrew University (982-92-191)
- 9:10AM *The Emergence of Phantom Bursting Through Diffusive Coupling in Pancreatic β -Cells.* Preliminary report.
 ► (22) **Richard Bertram***, Florida State University, and **Arthur Sherman**, National Institutes of Health (982-92-175)
- 9:50AM *Noise Sensitivity in a Neuronal Burster: Can Small Amplitude Noise Influence Dendritic Morphology?*
 (23) **Steven M. Baer***, Arizona State University, and **Rachel Kuske**, The University of British Columbia (982-92-130)

Special Session on Invariants of Knots and Low-Dimensional Manifolds, I

- 8:30 AM – 10:50 AM **Room 221, Business Administration**
 Organizers: **J. Scott Carter**, University of South Alabama
Masahico Saito, University of South Florida
- 8:30AM *Skein relations for oriented link invariants arising from the double of finite-dimensional Hopf algebras.* Preliminary report.
 ► (24) **David E. Raford**, University of Illinois at Chicago (982-16-271)
- 9:00AM *Quaternions and Virtual Knots.* Preliminary report.
 (25) **Louis H. Kauffman**, University of Illinois at Chicago (982-57-218)
- 9:30AM *Virtual Knots and the 3-strand Jones Polynomial.* Preliminary report.
 ► (26) **Heather A Dye**, The University of Illinois at Chicago (982-57-24)
- 10:00AM *Effects of Twisting on Mahler Measure of Alexander Polynomials.*
 (27) **Daniel S Silver*** and **Susan G Williams**, University of South Alabama (982-57-228)
- 10:30AM *Lifting representations of knot group commutator subgroups.*
 (28) **Daniel S. Silver** and **Susan G. Williams***, University of South Alabama (982-57-253)

Special Session on Homotopy Theory and Geometric Topology, I

- 8:30 AM – 10:50 AM **Room 220, Business Administration**
 Organizers: **Alexander N. Dranishnikov**, University of Florida
James E. Keesling, University of Florida
Yuli B. Rudyak, University of Florida
- 8:30AM *Elliptic operators and K theory for group C^* algebras.*
 (29) **Paul Frank Baum**, Penn State (982-19-51)
- 9:00AM *Coarse geometry, warped cones, and foliated control.* Preliminary report.
 (30) **John Roe**, Penn State (982-47-193)
- 9:30AM *Group actions and laminations of 3-manifolds.* Preliminary report.
 (31) **Sergio R Fenley**, Florida State University (982-57-139)
- 10:00AM *The Weyl and the Yamabe invariants.*
 (32) **Boris I Botvinnik**, University of Oregon (982-55-257)
- 10:30AM *Classifying polygonal chains of six segments.* Preliminary report.
 ► (33) **Gerard Venema*** and **Tom Clark**, Calvin College (982-57-155)

Special Session on The Likelihood Inferences in Statistics, I

- 8:30 AM – 10:50 AM **Room 110, Business Administration**
 Organizer: **Jian-Jian Ren**, University of Central Florida
- 8:30AM *Likelihood-Based Confidence Regions for Ratios of Regression Coefficients in Linear Models.*
 (34) **Malay Ghosh***, University of Florida, **Gauri Sankar Datta**, University of Georgia, and **Dalho Kim**, Kyungpook National University (982-62-13)

- 9:00AM *Weighted Likelihood Estimating Equations.*
(35) **Marianthi - Markatou**, NSF/Columbia University (982-62-126)
- 9:30AM *Empirical likelihood methods with heavy tails.*
(36) **Liang Peng**, Georgia Institute of Technology (982-62-10)
- 10:00AM *A statistical model for off-line signature recognition.* Preliminary report.
(37) **Ian W McKeague**, Florida State University (982-62-33)
- 10:30AM *Estimation of Sums of Unobservable Random Variables.* Preliminary report.
(38) **Cun-Hui Zhang**, Rutgers University (982-62-100)

Special Session on Nonlinear Waves, I

8:30 AM – 10:50 AM Room 126, Business Administration

Organizers: **Min Chen**, Purdue University
Roy Choudhury, University of Central Florida
David J. Kaup, University of Central Florida

- 8:30AM *Boussinesq Systems of Equations for Surface Water Waves.* Preliminary report.
(39) **Jerry L. Bona**, University of Illinois at Chicago (982-76-50)
- 9:00AM *Comparison of Model Equations on Waves of Moderate Amplitudes.* Preliminary report.
▶ (40) **Min Chen**, Purdue University (982-35-54)
- 9:30AM *Experiments on three-dimensional deep water waves.* Preliminary report.
▶ (41) **Joseph L Hammack**, Penn State University (982-76-71)
- 10:00AM *Mathematical modeling of recent experiments on three-dimensional, deep-water surface waves.* Preliminary report.
(42) **Diane M Henderson**, Penn State University (982-76-73)
- 10:30AM *The Effects of Surfactants on the Formation and Evolution of Capillary Waves.*
(43) **Hector D Cenicerros**, University of California Santa Barbara (982-76-89)

Special Session on Asymptotics of Integrable Partial Differential Equations, Riemann-Hilbert Problem and Related Topics, I

8:30 AM – 10:30 AM Room 115, Business Administration

Organizers: **Ken T. R. McLaughlin**, University of North Carolina at Chapel Hill and University of Arizona
Alexander Tovbis, University of Central Florida

- 8:30AM *Applications of a complete asymptotic expansion for the partition function of random matrix theory.*
(44) **N. Ercolani**, University of Arizona, and **K D McLaughlin***, University of North Carolina, Chapel Hill (982-60-184)
- 9:15AM *Shallow water waves, rotating elastic shafts and Toda flows.*
(45) **Roberto Camassa**, University of North Carolina (982-35-248)
- 10:00AM *Explicit factorization of almost periodic matrix functions.*
(46) **I M Spitkovsky**, College of William and Mary (982-30-241)

Special Session on Function Spaces, Singular Integrals and Applications to PDEs, I

8:30 AM – 10:50 AM Room 107, Business Administration

Organizers: **Marius Mitrea**, University of Missouri-Columbia
Dorina Mitrea, University of Missouri-Columbia

- 8:30AM *Harmonic extensions of distributions.*
(47) **Josefina Alvarez***, New Mexico State University, **Martha Guzman-Partida**, Universidad de Sonora, and **Salvador Perez-Esteva**, Instituto de Matematicas, Unidad Cuernavaca (982-42-166)
- 9:00AM *Minimal surfaces, sets of constant mean curvature and isoperimetric sets in sub-Riemannian groups.* Preliminary report.
▶ (48) **Nicola Garofalo**, Purdue University (982-58-225)
- 9:30AM *Very Weak Solutions of Partial Differential Equations.*
(49) **Tadeusz Iwaniec**, Syracuse University (982-35-238)
- 10:00AM *The mixed problem for Laplace's equation in a class of two-dimensional Lipschitz domains.* Preliminary report.
(50) **Russell M Brown***, University of Kentucky, **Luca Capogna** and **Loredana Lanzani**, University of Arkansas (982-35-240)
- 10:30AM *Analysis on rough Riemannian manifolds with boundary.*
(51) **Michael E Taylor**, Univ. of North Carolina (982-35-44)

Special Session on Computational Methods in Analysis, I

8:30 AM – 10:50 AM Room 218, Business Administration

Organizer: **George A. Anastassiou**, University of Memphis

- 8:30AM *Spectral Barriers and Inertial Manifolds of Dissipative Evolutionary Equations under Time Discretizations.* Preliminary report.
(52) **Yuncheng You**, University of South Florida (982-35-198)
- 9:00AM *Numerical methods in frequency estimation.*
▶ (53) Preliminary report.
Xin Li, University of Central Florida (982-41-208)
- 9:30AM *On Fuzzy Analysis and Approximations.*
(54) **George A Anastassiou**, University of Memphis (982-41-09)
- 10:00AM *Singularity Formation in Nonlinear Wave Equations.* Preliminary report.
(55) **Jerry L. Bona**, University of Illinois at Chicago (982-35-49)
- 10:30AM *Discrete and quantized discriminants.*
(56) **Mourad E.H. Ismail**, University of South Florida (982-33-70)

Special Session on Algebraic and Enumerative Combinatorics, I

9:00 AM – 10:50 AM

Room 119 (Auditorium),
Business Administration

Organizers: **James Haglund**, University of Pennsylvania
Jeff B. Remmel, University of California San Diego

- 9:00AM *Rook Theory interpretations of (p, q) -Analogues of Generalized Stirling Numbers.* Preliminary report. (57) **Jeffrey B. Remmel**, University of California at San Diego (982-05-148)
- 9:30AM *A Combinatorial Interpretation of (p, q) -hit numbers.* Preliminary report. (58) **Karen Sue Briggs**, University of California, San Diego (982-05-149)
- 10:00AM *Lagrangian pairs of Coxeter matroids.* Preliminary report. (59) **Richard Booth, A. Borovik, UMIST, and Neil White***, University of Florida (982-05-23)
- 10:30AM *The Catalan matroid.* (60) **Federico Ardila**, Massachusetts Institute of Technology (982-05-285)

Special Session on Financial Mathematics, I

9:00 AM – 10:50 AM Room 207, Business Administration

Organizers: **Craig A. Nolder**, Florida State University
Alec N. Kercheval, Florida State University

- 9:00AM *Utility Indifference Pricing of Derivatives under Stochastic Volatility.* (61) **Ronnie Sircar***, Princeton University, and **Thaleia Zariphopoulou**, University of Texas at Austin (982-91-114)
- 9:30AM *Efficient Computation of Hedging Parameters for American Options.* (62) **Stathis Tompaidis***, **Alexander Zemlianov** and **Ron Kaniel**, University of Texas at Austin (982-90-87)
- 10:00AM *Bond Option Valuation in a Markov Interest Rate Market.* (63) **Rogemar S Mamon**, University of Waterloo (982-60-21)
- 10:30AM *Liquidity Risk and Arbitrage Pricing Theory.* (64) **Umut Çetin***, Center for Applied Mathematics, Cornell University, **Robert A Jarrow**, Johnson Graduate School of Business, Cornell University, and **Philip Protter**, School of Operations Research and Industrial Engineering, Cornell University (982-91-217)

AMS Special Presentation: Part I

9:30 AM – 10:50 AM Room 383, Engineering

TA development using case studies: A workshop for faculty.
 Organizer: **Solomon Friedberg**, Boston College

Invited Address

11:00 AM – 11:10 AM Room 119 (Auditorium), Business Administration

- 11:00AM Welcoming Address, Kathryn L. Seidel, Dean, College of Arts and Sciences (65) *The q, t -Catalan numbers and the space of diagonal harmonics.* **James Haglund**, University of Pennsylvania (982-05-03)

Invited Address

1:30 PM – 2:20 PM Room 119 (Auditorium), Business Administration

- (66) *Elliptic and parabolic boundary problems in Sobolev-Besov spaces on nonsmooth domains.* **Marius Mitrea**, University of Missouri-Columbia (982-31-04)

Special Session on Algebraic and Enumerative Combinatorics, II

2:30 PM – 5:50 PM Room 119 (Auditorium), Business Administration

Organizers: **James Haglund**, University of Pennsylvania
Jeff B. Remmel, University of California San Diego

- 2:30PM *Generalized associahedra.* (67) **Sergey Fomin***, University of Michigan, and **Andrei Zelevinsky**, Northeastern University (982-05-233)
- 3:00PM *The pre-WDVV ring of physics and its topology.* (68) **Margaret A. Readdy**, University of Kentucky (982-05-62)
- 3:30PM *On the Property M Conjecture for the Heisenberg Lie algebra.* (69) **Phil Hanlon**, University of Michigan, and **Michelle L. Wachs***, University of Miami (982-05-283)
- 4:00PM *Hypergraph matching complexes, p -cycle complexes and Quillen complexes of symmetric groups.* (70) **John Shreshian***, Washington University, and **Michelle L Wachs**, University of Miami (982-05-205)
- 4:30PM *Counting bivariate Horn functions.* Preliminary report. (71) **Alicia Dickenstein**, Universidad de Buenos Aires, **Laura Felicia Matusevich***, Mathematical Sciences Research Institute, and **Timur Sadykov**, Stockholm University (982-14-250)
- 5:00PM *A Hodge decomposition for the complex of injective words.* (72) **Phil Hanlon** and **Patricia Hersh***, University of Michigan (982-05-145)
- 5:30PM *Algebraic Properties of Catalan Trees.* (73) **Dan W Singer**, Minnesota State University, Mankato (982-05-197)

Special Session on Commutative Algebra, II

2:30 PM – 5:50 PM Room 122, Business Administration

Organizers: **Heath M. Martin**, University of Central Florida
Stephanie A. Fitchett, Florida Atlantic University

- 2:30PM *Examples of domains inside power series rings.* Preliminary report. (74) **William Heinzer**, Purdue University, **Christel Rotthaus**, Michigan State University, and **Sylvia M Wiegand***, University of Nebraska/ National Science Foundation (982-13-202)
- 3:00PM *Complex computations in commutative algebra.* Preliminary report. (75) **Amelia Taylor***, Rutgers University, and **Dave Bayer**, Barnard College (982-13-242)
- 3:30PM *Full ideals in regular local rings.* (76) **Catalin Ciuperca**, University of California-Riverside (982-13-190)

- 4:00PM *Generalizing k -configurations and Macaulay's O -sequences.* (77)
Sindi Sabourin, University of Notre Dame (982-13-220)
- 4:30PM *On asymptotic primes associated to certain homology modules.* (78)
D. Katz*, University of Kansas, and **E. West**, Benedictine College (982-13-209)
- 5:00PM *One-dimensional local rings with bounded but infinite Cohen-Macaulay type.* Preliminary report. (79)
Graham J Leuschke, University of Kansas, and **Roger A Wiegand***, University of Nebraska-Lincoln (982-13-262)
- 5:30PM *Monomialization of strongly prepared morphisms from n -folds to surfaces.* (80)
Steven D Cutkosky and **Olga Kashcheyeva***, University of Missouri (982-14-245)

- 3:30PM *Risk Contribution of Investment Strategies.* Preliminary report. (89)
George Xiang, Loomis Syales & Company (982-91-222)
- 4:00PM *Local Risk Minimization When the Price Process Has Jumps Depending on Its Past History.* (90)
Kiseop Lee, University of Louisville (982-60-65)
- 4:30PM *Utility Maximization with Random Endowment in Incomplete Markets.* (91)
Gordan Žitković*, Department of Statistics, Columbia University, and **Ioannis Karatzas**, Columbia University (982-91-161)
- 5:00PM *How to Beat a Stochastic Target.* (92)
Jan Vecer, Columbia University, NY, NY (982-91-258)

Special Session on Computational Mathematics, II

2:30 PM – 5:50 PM Room 146, Business Administration

- Organizers: **Ricardo H. Nochetto**, University of Maryland
Bernardo Cockburn, University of Minnesota
- 2:30PM *Coupled Finite Element Methods for the Shallow Water Equations.* Preliminary report. (81)
Clint Dawson, The University of Texas at Austin (982-65-121)
- 3:00PM *Eulerian Methods for Viscosity and Non-Viscosity Solutions of Hamilton-Jacobi Equations Arising from Wave Propagations.* (82)
Jianliang Qian, University of California Los Angeles (982-65-129)
- 3:30PM *Sandpiles around obstacles: modeling, analysis and numerics.* Preliminary report. (83)
Pierre A Gremaud, North Carolina State University (982-65-171)
- 4:00PM Break.
- 4:30PM *A characterization of hybridized mixed methods for the Dirichlet problem.* Preliminary report. (84)
B Cockburn, University of Minnesota, and **J Gopalakrishnan***, University of Florida (982-65-144)
- 5:00PM *Some results on energy minimizing bases in algebraic multigrid method.* (85)
Jinchao Xu and **Ludmil T. Zikatanov***, The Pennsylvania State University (982-65-204)
- 5:30PM *A New Dual-Petrov-Galerkin Method for Third and Higher Odd-order Differential Equations: Application to the KDV Equation.* (86)
Jie Shen, Purdue University (982-65-159)

Special Session on Financial Mathematics, II

2:30 PM – 5:20 PM Room 207, Business Administration

- Organizers: **Craig A. Nolder**, Florida State University
Alec N. Kercheval, Florida State University
- 2:30PM *Optimal Risk Model Aggregation.* Preliminary report. (87)
Alec Norton Kercheval*, Florida State University, **Greg Anderson**, **Lisa Goldberg**, **Guy Miller** and **Kathy Sorge**, Barra, Inc. (982-91-221)
- 3:00PM *Rolldown, Expectations Hypotheses, and Risk Neutrality.* (88)
C. Greg Anderson, Barra, Inc. (982-91-109)

Special Session on Functional and Harmonic Analysis of Wavelets, Frames and their Applications, II

2:30 PM – 5:50 PM Room 121, Business Administration

- Organizers: **Deguang Han**, University of Central Florida
Manos I. Papadakis, University of Houston
- 2:30PM *Applications to a unified characterization of reproducing systems of functions.* Preliminary report. (93)
Guido L Weiss, Washington University (982-42-186)
- 3:00PM *The Balian-Low theorem for the symplectic form on \mathbb{R}^{2d} .* Preliminary report. (94)
John J Benedetto, **Wojciech Czaja***, University of Maryland, and **Andrei Ya Maltsev**, Landau Institute for Theoretical Physics (982-42-97)
- 3:30PM *Wavelets for non-expansive dilations.* Preliminary report. (95)
David M Larson, Texas A&M University, and **Darrin M Speegle***, Saint Louis University (982-42-174)
- 4:00PM *Necessary sampling density for exact reconstruction of functions in shift invariant spaces from weighted averages.* (96)
Akram Aldroubi, Vanderbilt University (982-46-182)
- 4:30PM *Local Dual Generator of Shift-Invariant Spaces with Local Generator.* Preliminary report. (97)
Qiyu Sun, Vanderbilt University (982-42-176)
- 5:00PM *Custom built tight frames.* (98)
Peter G. Casazza, University of Missouri - Columbia (982-43-137)
- 5:30PM *On Piecewise Linear Wavelets Construction over Triangulations.* Preliminary report. (99)
Jiansheng Cao, **Don Hong***, East Tennessee State University, and **Qingbo Xue**, University of Central Florida (982-41-42)

Special Session on Graph Theory, II

2:30 PM – 5:50 PM Room 225, Business Administration

- Organizers: **Robert C. Brigham**, University of Central Florida
Cun-Quan Zhang, West Virginia University
Yue Zhao, University of Central Florida
- 2:30PM *Graph homomorphism into an odd cycle.* (100)
Hong-Jian Lai* and **Gexin Yu**, West Virginia University (982-05-22)

- 3:00PM *Triangular embeddings of complete graphs.*
 ▶ (101) Preliminary report.
Mark Ellingham* and **Chris Stephens**, Vanderbilt University (982-05-55)
- 3:30PM *Independent spanning trees in 4-connected graphs.*
 (102) **Xingxing Yu***, **Sean Curran** and **Orlando Lee**, Georgia Tech (982-05-34)
- 4:00PM *The Nice Cycle Lemma.*
 (103) **Michael O Albertson***, Smith College, and **Joan P Hutchinson**, Macalester College (982-05-53)
- 4:30PM *Circular coloring and homomorphisms from sparse graphs with large girth.*
 (104) **Oleg V. Borodin**, Russian Academy of Science (Novosibirsk), **Seog-Jin Kim**, **Alexandr V. Kostochka** and **Douglas B. West***, University of Illinois (Urbana) (982-05-83)
- 5:00PM *Edge partitions of 2-edge-connected graphs into long paths.* Preliminary report.
 ▶ (105) **Alexandr Kostochka***, University of Illinois, and **Vladimir A Tashkinov**, Institute of Mathematics, Russian Academy of Science (982-05-60)
- 5:30PM *K_p -minor in p -connected graphs.*
 (106) **K. Kawarabayashi**, Keio University, **R. Luo**, Middle Tennessee State University, **J. B. Niu** and **C. Q. Zhang***, West Virginia University (982-05-20)
- 3:30PM *Shadow world link invariant away from roots of unity.*
 (113) **Charles Frohman**, The University of Iowa, and **Joanna Kania-Bartoszyńska***, Boise State University (982-57-124)
- 4:00PM *The Kauffman Bracket Skein Module of a Twist Knot Exterior.* Preliminary report.
 (114) **Doug Bullock**, Boise State University, and **Walter Lo Faro***, University of Wisconsin, Stevens Point (982-57-278)
- 4:30PM *4-moves and 4th Burnside group of links: Nakanishi and Kawauchi conjectures.*
 (115) **Mieczyslaw K. Dabkowski** and **Jozef H. Przytycki***, GWU (982-57-200)
- 5:00PM *Rational moves and p th Burnside groups of links.*
 (116) **Mieczyslaw K. Dabkowski*** and **Jozef H. Przytycki**, GWU (982-57-199)
- 5:30PM *Constructing links with the same quantum invariants.* Preliminary report.
 (117) **Yongwu Rong**, George Washington University (982-57-227)

Special Session on Homotopy Theory and Geometric Topology, II

Special Session on Mathematical Neuroscience, II

2:30 PM – 5:40 PM Room 116, Business Administration

Organizers: **Steve J. Cox**, Rice University
Richard Bertram, Florida State University

- 2:30PM *Noise-stabilized synchronization in populations of model neurons.*
 ▶ (107) **David R. McMillen*** and **Nancy Kopell**, Center for BioDynamics, Boston University (982-92-104)
- 3:10PM *Stochastic simulations of reaction-diffusion events leading to CaMKII activation in a dendritic spine during LTP induction.*
 (108) **William R Holmes*** and **Yin Li**, Ohio University (982-92-255)
- 3:50PM *Synchronized activity and loss of synchrony among heterogeneous conditional oscillators.*
 (109) **David Terman***, Ohio State University, and **Jon Rubin**, University of Pittsburgh (982-92-136)
- 4:30PM *Chaotic phase synchronization in systems with small phase diffusion.*
 (110) **Kresimir Josic***, University of Houston, and **Margaret Beck**, Boston University (982-37-103)
- 5:10PM Discussion

Special Session on Invariants of Knots and Low-Dimensional Manifolds, II

2:30 PM – 5:50 PM Room 221, Business Administration

Organizers: **J. Scott Carter**, University of South Alabama
Masahico Saito, University of South Florida

- 2:30PM *Planar algebras generated by strongly regular graphs.*
 (111) **Brian W Curtin**, University of South Florida (982-05-266)
- 3:00PM *Quantum Invariants away from Roots of Unity.*
 (112) **Charles D. Frohman***, University of Iowa, and **Joanna Kania-Bartoszyńska**, Boise State University (982-57-46)

2:30 PM – 5:50 PM Room 220, Business Administration

Organizers: **Alexander N. Dranishnikov**, University of Florida
James E. Keesling, University of Florida
Yuli B. Rudyak, University of Florida

- 2:30PM *Generalizations of the Genus and Cone Length of a Map.* Preliminary report.
 (118) **Martin Arkowitz***, Dartmouth College, and **Jeffrey Strom**, Western Michigan University (982-55-188)
- 3:00PM *A Bochner-type inequality for the Gottlieb group.*
 (119) **John F Oprea**, Cleveland State University (982-55-26)
- 3:30PM *Rationalization of the G-Sequence for Gottlieb Groups.* Preliminary report.
 (120) **Gregory Luption***, Cleveland State University, and **Samuel Bruce Smith**, St. Joseph's University (982-55-252)
- 4:00PM *The Lusternik-Schnirelmann category of $Sp(3)$.*
 (121) **Lucia Fernandez-Suarez**, Universidade do Minho (Gualtar), **Antonio Gomez-Tato**, Universidade de Santiago de Compostela, **Jeffrey Strom***, Western Michigan University, and **Daniel Tanre**, Universite de Lille 1 (982-55-88)
- 4:30PM *Classification of homotopy G-actions on spheres.*
 (122) **Jesper Grodal***, University of Chicago, and **Jeffrey H Smith**, Purdue University (982-55-275)
- 5:00PM *Root Invariants in the Adams Spectral Sequence.* Preliminary report.
 (123) **Mark J Behrens**, University of Chicago (982-55-68)
- 5:30PM *Pro-spectra and duality.* Preliminary report.
 (124) **Daniel C Isaksen**, University of Notre Dame (982-55-183)

Special Session on The Likelihood Inferences in Statistics, II

2:30 PM – 5:20 PM Room 110, Business Administration

Organizer: **Jian-Jian Ren**, University of Central Florida

- 2:30PM *Monotone functions: Non-standard limit theory for the likelihood ratio statistic.*
(125) **Moulinath Banerjee**, University of Michigan (982-62-154)
- 3:00PM *Estimation and Testing for Monotone Functions in Gaussian White Noise.*
(126) **Jon A. Wellner**, University of Washington (982-62-63)
- 3:30PM *Modified likelihood ratio test for finite mixture models in the presence of a structure parameter.*
▶ (127) Preliminary report.
Jiahua Chen*, University of Waterloo, and **John D. Kalbfleisch**, University of Michigan (982-62-80)
- 4:00PM *Mapping Quantitative Trait Loci from a Genetic Linkage Map.*
(128) **Myron N Chang***, **Rongling Wu**, **Samuel S Wu** and **George Cassella**, Statistics Dept., University of Florida (982-62-15)
- 4:30PM *The In-and-Out-of-Sample (IOS) Likelihood Ratio Test for Model Misspecification.*
(129) **Brett Presnell***, University of Florida, and **Dennis D Boos**, North Carolina State University (982-62-67)
- 5:00PM *Testing Exponentiality Against Likelihood Ratio Behavior Using Kernel Methods.*
(130) **Ibrahim A. Ahmad***, University of Central Florida, **Hicham M. Al-Nachawati** and **Mahmoud I. Hendi**, King Saud University (982-62-14)

Special Session on Nonlinear Waves, II

2:30 PM – 5:20 PM Room 126, Business Administration

Organizers: **Min Chen**, Purdue University
Roy Choudhury, University of Central Florida
David J. Kaup, University of Central Florida

- 2:30PM *Second Harmonic Generation as an Inverse Problem.*
(131) **D. J. Kaup***, University of Central Florida, and **H. Steudel**, Humbolt University (982-39-79)
- 3:00PM *Adjoint Symmetry Constraints of the AKNS Type Soliton Equations.* Preliminary report.
▶ (132) **Wen-Xiu Ma***, University of South Florida, and **Ruguang Zhou**, University of Paderborn (982-37-91)
- 3:30PM *A New Integrable Hierarchy and Travelling Wave Solution.* Preliminary report.
(133) **Zhijun Qiao*** and **Darryl Holm**, Los Alamos National Laboratory (982-35-31)
- 4:00PM *Integrability Characteristics and Coherent Structures of Equations of the Family*
 $u_t = u_{xxx} + F(u, u_x, u_{xx})$.
(134) **Roy Choudhury**, University of Central Florida (982-35-147)
- 4:30PM *Hamiltonian and Statistical Mechanics of the Truncated Burgers-Hopf Equation.*
(135) **Rafail V. Abramov**, Courant Institute, **Gregor Kovacic***, Rensselaer Polytechnic Institute, **Andrew J Majda**, Courant Institute, and **Timofeyev Ilya**, University of Houston (982-37-90)
- 5:00PM *Multi-symplectic methods for Hamiltonian PDEs.*
(136) **Constance M Schober***, University of Central Florida, and **Alvaro Islas**, Old Dominion University (982-35-219)

Special Session on Asymptotics of Integrable Partial Differential Equations, Riemann-Hilbert Problem and Related Topics, II

2:30 PM – 5:15 PM Room 115, Business Administration

- Organizers: **Ken T. R. McLaughlin**, University of North Carolina at Chapel Hill and University of Arizona
Alexander Tovbis, University of Central Florida
- 2:30PM *The Generation of Undular Bores and Solitons in the Trailing Shelves of Slowly Varying Solitary Waves.*
(137) **Roger HJ Grimshaw**, Loughborough University (982-35-92)
- 3:15PM *New Results on the Zero Dispersion Limit of the KdV.*
(138) **Fei-Ran Tian**, Ohio State University (982-35-287)
- 4:00PM *Large Degree Asymptotics of Discrete Orthogonal Polynomials with General Weights.*
(139) **J. Baik**, Princeton University, **T. Kriecherbauer**, Ruhr University Bochum, **K. McLaughlin**, University of North Carolina, Chapel Hill, and **P. Miller***, University of Michigan (982-41-276)
- 4:45PM *An Isomonodromy Cluster of Two Regular Singularities and its Application to Random Matrices.*
(140) **Alexander V Kitaev**, Steklov Mathematical Institute, St. Petersburg, and University of Sydney (982-33-206)

Special Session on Function Spaces, Singular Integrals and Applications to PDEs, II

2:30 PM – 5:50 PM Room 107, Business Administration

- Organizers: **Marius Mitrea**, University of Missouri-Columbia
Dorina Mitrea, University of Missouri-Columbia
- 2:30PM *Harmonic Analysis and Nonlinear Ginzburg-Landau Systems for Layered Superconductors.* Preliminary report.
▶ (141) **Patricia Bauman***, Purdue University, and **Yangsuk Ko**, University of Illinois (982-49-231)
- 3:00PM *Spectral properties of parabolic layer potentials and transmission boundary problems in nonsmooth domains.*
(142) **Steve Hofmann**, University of Missouri at Columbia, **John L Lewis***, University of Kentucky, and **Marius Mitrea**, University of Missouri at Columbia (982-35-48)
- 3:30PM *The Aronsson-Euler equation for Absolutely minimizing Lipschitz extensions with respect to Carnot-Carathéodory metrics.* Preliminary report.
(143) **Luca Capogna**, University of Arkansas (982-35-85)
- 4:00PM *Mapping properties of caloric layer potentials on anisotropic Besov spaces in Lipschitz cylinders.*
(144) **Tunde D Jakab**, University of Missouri - Columbia (982-31-150)
- 4:30PM *Sobolev spaces and complex powers on manifolds with a Lie structure at infinity.*
(145) **Robert Lauter**, Mainz University, **Victor Nistor***, Penn State University, and **Andras Vasy**, MIT (982-58-196)
- 5:00PM *The class A_p , $0 < p \leq 1$, of matrix weights.*
(146) Preliminary report.
Svetlana A Roudenko*, Duke University, and **Michael Frazier**, Michigan State University (982-42-169)

5:30PM *Szego and Bergman projections for non-smooth planar domains: old and new.* Preliminary report.
Loredana Lanzani*, University of Arkansas, and **Elias M Stein**, Princeton University (982-31-259)

Special Session on Computational Methods in Analysis, II

2:30 PM – 5:50 PM **Room 218, Business Administration**

Organizer: **George A. Anastassiou**, University of Memphis

2:30PM *Some Properties of the Perturbed Haar Wavelets.*
 (148) **Alfredo L. González**, Universidad de Mar del Plata, and **Richard A. Zalik***, Auburn University (982-42-128)

3:00PM *On the approximation properties on the line and half-line of certain rationally weighted polynomials.*
 (149) **Theodore A. Kilgore**, Auburn University (982-41-131)

3:30PM *On weighted simultaneous approximation on the infinite interval.*
 (150) **Katherine Balázs**, Auburn University (982-41-143)

4:00PM *The Sinc-Galerkin method for solving linear fifth and sixth order boundary-value problems.*
 (151) **Ahmed I Zayed***, DePaul University, and **Mohamed El-Gamel**, Mansoura University (982-65-07)

4:30PM *Symmetric Spaces with Maximal Projection Constants.*

Bruce L. Chalmers*, Univ. of Cal., Riverside, and **Grzegorz Lewicki**, Jagiellonian University, Krakow (982-46-84)

5:00PM *Periodic Travelling-Waves for Nonlinear, Dispersive Equations.*
 (153) **Hongqiu Chen**, The University of Memphis (982-35-52)

5:30PM *Asymptotic behavior of Faber and orthogonal polynomials.*
 (154) **Igor E Pritsker**, Oklahoma State University (982-41-37)

AMS Special Presentation: Part II

2:30 PM – 4:00 PM **Room 383, Engineering**

TA development using case studies: A workshop for faculty.

Organizer: **Solomon Friedberg**, Boston College

University of Central Florida College of Arts and Sciences Reception

6:00 PM – 7:00 PM **Atrium, Business Administration**

Sunday, November 10

Meeting Registration

8:00 AM – NOON **Atrium, Business Administration**

AMS Exhibit and Book Sale

8:00 AM – NOON **Atrium, Business Administration**

Special Session on Commutative Algebra, III

8:00 AM – 10:50 AM **Room 122, Business Administration**

Organizers: **Heath M. Martin**, University of Central Florida

Stephanie A. Fitchett, Florida Atlantic University

8:00AM *On the Hilbert functions of level algebras.*
 (155) Preliminary report.

A.V. Geramita, Queen's University, **T. Harima**, Shikoku University, **J. Migliore***, University of Notre Dame, and **Y. Shin**, Sung Shin Women's University (982-13-138)

8:30AM *On homogeneous linear systems of plane curves of fixed degree with a composite number of base points.* Preliminary report.

Anita Buckley, University of Warwick, UK, and **Marina Zompatori***, Boston University (982-14-35)

9:00AM *On the Hilbert functions of fat points in $\mathbb{P}^1 \times \mathbb{P}^1$.*
 (157) **Adam Van Tuyl***, Lakehead University, and **Elena Guardo**, University of Catania (982-13-81)

9:30AM *A Construction Of Codimension 3 Gorenstein Ideals And Applications.*

Cristiano Bocci, University of Turin, **Giorgio Dalzotto***, University of Genoa, **Roberto Notari** and **Maria Luisa Spreafico**, Politecnico di Torino (982-13-164)

10:00AM *On The Conductor Of Points in \mathbb{P}^n .*

Laura Bazzotti, University Of Genoa (982-13-165)

10:30AM *Projective embeddings of blown up varieties.*
 (160) **Huy Tai Ha**, University of Missouri (982-14-119)

Special Session on Functional and Harmonic Analysis of Wavelets, Frames and their Applications, III

8:00 AM – 10:50 AM **Room 121, Business Administration**

Organizers: **Deguang Han**, University of Central Florida

Manos I. Papadakis, University of Houston

8:00AM *On the choice of scaling functions for a generalized multiresolution analysis.* Preliminary report.

Lawrence W. Baggett*, University of Colorado, **Palle E. T. Jorgensen**, University of Iowa, **Kathy D. Merrill**, The Colorado College, and **Judith A. Packer**, University of Colorado (982-43-95)

8:30AM *Frame sets and related problems.*

X Dai, **Y Diao*** and **Q Gu**, UNC Charlotte (982-42-101)

9:00AM *The Regularity of Irregular Gabor Bases.*

Yang Wang, Georgia Institute of Technology (982-42-180)

9:30AM *Measure Function and Redundancy of Weyl-Heisenberg Multiframe and Superframes.* Preliminary report.

Radu Balan*, Siemens Corporate Research, and **Zeph Landau**, Mathematical Science Research Institute (982-40-187)

10:00AM *Some problems related to the distributional Zak transform.*

Jean-Pierre Gabardo, McMaster University (982-42-214)

10:30AM *Compactly Supported Symmetric MRA Tight Wavelet Frames With Minimum Redundancy.* Preliminary report.

Bin Han* and **Mo Qun**, University of Alberta (982-42-235)

Special Session on Graph Theory, III

8:00 AM – 10:50 AM **Room 225, Business Administration**

Organizers: **Robert C. Brigham**, University of Central Florida

Cun-Quan Zhang, West Virginia University

Yue Zhao, University of Central Florida

- 8:00AM (167) *Amallamorphs and Homeomorphs of the Petersen Graph.*
Hossein Shahmohamad*, Rochester Institute of Technology, and **Earl G Whitehead, Jr.**, University of Pittsburgh (982-05-58)
- 8:30AM (168) *The nonorientable genus of $K_{l,m,n}$: two counterexamples.*
Chris Stephens*, Vanderbilt University, and **Xiaoya Zha**, Middle Tennessee State University (982-05-133)
- 9:00AM (169) *Orientable and non-orientable genera for some complete tripartite graphs.*
Kenichi Kawarabayashi, Princeton University, and **Xiaoya Zha***, Middle Tennessee State University (982-05-66)
- 9:30AM (170) *The strong perfect graph theorem.* Preliminary report.
Maria Chudnovsky, Princeton University, **Neil Robertson***, Ohio State University, **Paul Seymour**, Princeton University, and **Robin Thomas**, Georgia Institute of Technology (982-05-57)
- 10:00AM (171) *The circular chromatic number of digraphs.*
Drago Bokal, **Gašper Fijavž**, **Martin Juvan**, University of Ljubljana, Slovenia, **P. Mark Kayll**, University of Montana, and **Bojan Mohar***, University of Ljubljana, Slovenia (982-05-11)
- 10:30AM (172) *A survey of randomly decomposable graphs.*
Ken W Smith*, Central Michigan University, **Robert Molina** and **Myles McNally**, Alma College (982-05-29)

Special Session on Mathematical Neuroscience, III

8:00 AM – 10:30 AM Room 116, Business Administration

Organizers: **Steve J. Cox**, Rice University
Richard Bertram, Florida State University

- 8:00AM (173) *Delayed inhibition allows for oscillatory response to communication but not prey stimuli.*
Brent Doiron*, **Maurice J. Chacron**, **Leonard Maler**, **Andre Longtin**, University of Ottawa, and **Joseph Bastian**, University of Oklahoma (982-92-256)
- 8:40AM Discussion
- 9:20AM (174) *Bifurcation on the Visual Cortex with Weakly Anisotropic Lateral Coupling.*
Martin Golubitsky*, University of Houston, **LieJune Shiau**, University of Houston - Clear Lake, and **Andrew Torok**, University of Houston (982-34-115)
- 10:00AM Discussion

Special Session on Invariants of Knots and Low-Dimensional Manifolds, III

8:00 AM – 10:50 AM Room 221, Business Administration

Organizers: **J. Scott Carter**, University of South Alabama
Masahico Saito, University of South Florida

- 8:00AM (175) *Quandle Cocycle Invariants and Alexander Matrices.*
Marina Appiou Nikiforou, University of South Florida (982-55-239)

8:30AM (176) *Quandle colorings of classical knots and knotted surfaces.*

Angela K Harris, University of South Alabama (982-57-132)

9:00AM (177) *A spectral sequence in quandle homology.*
Mohamed Elhamedi, University of South Florida (982-57-232)

9:30AM (178) *Computation of quandle cocycle invariants of knots using certain simple quandles.* Preliminary report.
Matias A Graña*, MIT and University of Buenos Aires, and **Anatoly Preygel**, Montgomery Blair High School (982-57-168)

10:00AM (179) *Classification of finite Alexander quandles.*
V Sam Nelson, Louisiana State University (982-55-75)

10:30AM (180) *Quadratic quandles and their link invariants.*
R A Litherland, Louisiana State University (982-57-146)

Special Session on Homotopy Theory and Geometric Topology, III

8:00 AM – 10:50 AM Room 220, Business Administration

Organizers: **Alexander N. Dranishnikov**, University of Florida
James E. Keesling, University of Florida
Yuli B. Rudyak, University of Florida

8:00AM (181) *On generalizing string topology.* Preliminary report.
Uwe Kaiser, Boise State University (982-57-107)

8:30AM (182) *On a formula for the asymptotic dimension of amalgamated free products.* Preliminary report.
G. Bell*, University of Louisville, **A. Dranishnikov** and **J. Keesling**, University of Florida (982-20-127)

9:00AM (183) *Resolutions of 2-polyhedra and nonstandard regular neighborhoods of PL embedded codimension ≤ 2 polyhedra.*
Dušan Repovš, University of Ljubljana (982-57-64)

9:30AM (184) *Topological structure of reptiles and self-affine tiles.*
Sze-Man Ngai*, Georgia Southern University, **Nhu T. Nguyen**, New Mexico State University, and **Tai-Man Tang**, The Chinese University of Hong Kong (982-52-201)

10:00AM (185) *On the homology cobordism group of integral homology 3-spheres.*
Nikolai Saveliev, University of Miami (982-57-135)

10:30AM (186) *Smooth mappings without certain singularities.* Preliminary report.
Rustam R Sadykov, University of Florida (982-57-167)

Special Session on The Likelihood Inferences in Statistics, III

8:00 AM – 10:20 AM Room 110, Business Administration

Organizer: **Jian-Jian Ren**, University of Central Florida

8:00AM (187) *Empirical Likelihood Inference in Linear Regression for Right Censored Survival Data.* Preliminary report.
Gang Li, University of California at Los Angeles (982-62-61)

8:30AM (188) *Cox Proportional Hazards Model with Additional Information on the Baseline.*
Mai Zhou, University of Kentucky (982-62-69)

- 9:00AM *On Empirical Likelihood for a Semiparametric Mixture Model.* (189)
Fei Zou*, Department of Biostatistics, the University of North Carolina at Chapel Hill, **Jason P Fine** and **Brian S Yandell**, Department of Statistics, University of Wisconsin at Madison (982-62-106)
- 9:30AM *Diagnostics for Empirical Likelihood Inference.* (190)
 Preliminary report.
Nicole A. Lazar, Carnegie Mellon University (982-62-17)
- 10:00AM *Convergence theory for margin-based classifiers via penalization.* Preliminary report. (191)
Xiaotong Shen, The Ohio State University (982-62-12)

- 9:00AM *Area operators on BMO space.* (200)
 ▶ **Zhijian Wu*** and **Nattakorn Sukantamala**, The University of Alabama (982-32-279)
- 9:30AM *$L(\infty, q)$ spaces: embeddings, interpolation and extrapolation.* Preliminary report. (201)
Mario Milman, Florida Atlantic University (982-46-211)
- 10:00AM *Weighted Estimates for Laplace's Equation in Lipschitz Domains.* Preliminary report. (202)
Zhongwei Shen, University of Kentucky (982-35-134)
- 10:30AM *Weighted norm inequalities for the dyadic square function and a two-weight extrapolation theorem.* Preliminary report. (203)
 ▶ **Fedor Nazarov***, Michigan State University, and **Michael Wilson**, University of Vermont (982-43-111)

Special Session on Nonlinear Waves, III

8:00 AM – 10:50 AM Room 126, Business Administration

Organizers: **Min Chen**, Purdue University
Roy Choudhury, University of Central Florida
David J. Kaup, University of Central Florida

- 8:00AM *The Initial-Value Problem for the Extended Korteweg-De Vries Equation.* (192)
Roger HJ Grimshaw, Loughborough University (982-35-93)
- 8:30AM *Convergence of Petviashvili's iterative method for stationary solutions of nonlinear wave equations.* Preliminary report. (193)
 ▶ **Dmitry E. Pelinovsky**, McMaster University (Canada) (982-35-96)
- 9:00AM *Initial Value Problem for Ostrovsky Equation. Solvability and Long Time Asymptotics.* Preliminary report. (194)
Vladimir Varlamov*, University of Texas – Pan American, and **Yue Liu**, University of Texas at Austin at Arlington (982-35-36)
- 9:30AM *Discrete NLS Solitons in an Optical Network.* Preliminary report. (195)
Lisa S Cohen* and **David J Kaup**, University of Central Florida (982-78-264)
- 10:00AM *A New Method to Discuss Existence of Solitary Waves for Non-linear, Dispersive Wave Equations.* (196)
Hongqiu Chen, The University of Memphis (982-35-56)
- 10:30AM *Instability of Standing Waves of the Schrödinger Equation with Inhomogeneous Nonlinearity.* Preliminary report. (197)
 ▶ **Yue Liu***, Univ. of Texas, Arlington, **Xiao-Ping Wang** and **Ke Wang**, The Hong Kong Univ. of Science and Technology (982-35-40)

Special Session on Function Spaces, Singular Integrals and Applications to PDEs, III

8:00 AM – 10:50 AM Room 107, Business Administration

Organizers: **Marius Mitrea**, University of Missouri-Columbia
Dorina Mitrea, University of Missouri-Columbia

- 8:00AM *Stationary Euler equation on Lipschitz domains in Riemannian manifolds.* (198)
Martin Dindos, Cornell University (982-35-213)
- 8:30AM *Haar multipliers revisited.* Preliminary report. (199)
Maria Cristina Pereyra, University of New Mexico (982-42-236)

Special Session on Computational Methods in Analysis, III

8:00 AM – 10:20 AM Room 218, Business Administration

Organizer: **George A. Anastassiou**, University of Memphis

- 8:00AM *On Polynomial Approximation of Analytic functions and Conformal Mappings.* (204)
Arthur A. Danielyan, University of Central Florida (982-30-140)
- 8:30AM *On Hankel Operators and Rational Approximation.* (205)
Vasily A. Prokhorov, University of South Alabama (982-41-178)
- 9:00AM *Interpolation in Several Variables.* (206)
 ▶ **Boris - Shekhtman**, University of South Florida (982-41-192)
- 9:30AM *Degree of Approximation by a Sequence of Linear Operators.* (207)
R. N. Mohapatra, University of Central Florida, Orlando (982-41-19)
- 10:00AM *Spline Type Biorthogonal Wavelets.* Preliminary report. (208)
Tian-Xiao He, Illinois Wesleyan University (982-42-77)

Special Session on Computational Mathematics, III

8:30 AM – 10:50 AM Room 146, Business Administration

Organizers: **Ricardo H. Nochetto**, University of Maryland
Bernardo Cockburn, University of Minnesota

- 8:30AM *Error Control in Finite Volume Methods for Convection-Diffusion-Reaction Problems.* (209)
Raycho D Lazarov*, Texas A&M University, and **Stanimire Z Tomov**, Brookhaven National Laboratory (982-65-157)
- 9:00AM *A posteriori error analysis for the Allen-Cahn equation.* (210)
Daniel Kessler*, **Ricardo Nochetto**, University of Maryland, and **Alfred Schmidt**, University of Bremen (982-65-117)
- 9:30AM *Finite Element Methods for Surface Diffusion.* (211)
Ricardo H. Nochetto, University of Maryland (982-65-142)
- 10:00AM *Generalized Green's Functions And The Effective Domain Of Influence.* (212)
Donald J Estep, Colorado State University (982-65-125)

10:30AM (213) *A posteriori error estimates for Hamilton-Jacobi equations.*
Bernardo Cockburn, U. of Minnesota (982-65-118)

9:45AM (223) *Semi-classical (zero dispersion) limit solutions to the focusing Nonlinear Schroedinger Equations (NLS).* Preliminary report.
Alexander Tovbis, University of Central Florida (982-35-177)

Special Session on Algebraic and Enumerative Combinatorics, III

9:00 AM – 10:50 AM **Room 119 (Auditorium), Business Administration**

Organizers: **James Haglund**, University of Pennsylvania
Jeff B. Remmel, University of California San Diego

9:00AM (214) *New Lambert series formulas for 12 and 20 squares.* Preliminary report.
Stephen C Milne, The Ohio State University (982-05-282)

9:30AM (215) *"Partitions with gap conditions: some old and new results."*
Alexander Berkovich, University of Florida (982-05-247)

10:00AM (216) *Generalization of the Young lattice and unimodality conjectures.* Preliminary report.
J Morse*, University of Miami, and **L Lapointe**, University of Talca (982-05-268)

10:30AM (217) *Combinatorics of the Lascoux-Schützenberger Tree.*
David P Little, Dartmouth College (982-05-261)

Special Session on Financial Mathematics, III

9:00 AM – 10:50 AM **Room 207, Business Administration**

Organizers: **Craig A. Nolder**, Florida State University
Alec N. Kercheval, Florida State University

9:00AM (218) *Conditional Value-at-Risk, Methodology and Applications: Overview.*
Stanislav P Uryasev, University of Florida (982-90-120)

9:30AM (219) *Risk Management and Portfolio Optimization with Conditional Drawdown-at-Risk.*
Michael Zabarankin, University of Florida (982-90-151)

10:00AM (220) *Optimal Security Liquidation Strategy: Sample-Path Approach.* Preliminary report.
P. A. Krokmal, University of Florida, Department of Industrial and Systems Engineering (982-91-113)

10:30AM (221) *Modelling Stock Price Process as a Continuous Time Jump Process.* Preliminary report.
Rituparna Sen* and **Per A. Mykland**, University of Chicago (982-62-189)

Special Session on Asymptotics of Integrable Partial Differential Equations, Riemann-Hilbert Problem and Related Topics, III

9:00 AM – 10:15 AM **Room 115, Business Administration**

Organizers: **Ken T. R. McLaughlin**, University of North Carolina at Chapel Hill and University of Arizona
Alexander Tovbis, University of Central Florida

9:00AM (222) *Calculation of the semiclassical limit of focusing NLS and its long time behavior.*
Stephanos Venakides, Duke University (982-35-260)

Session for Contributed Papers

9:00 AM – 10:25 AM **Room 383, Engineering**

9:00AM (224) *Solution of Nonlinear Optimal Control Problems by Hybrid Functions.*
Mohsen Razzaghi, Mississippi State University (982-49-28)

9:15AM (225) *Measures of Concordance Determined by D_4 – Invariant 2-Copulas.* Preliminary report.
H H Edwards*, **P Mikusinski** and **M D Taylor**, University of Central Florida (982-60-30)

9:30AM (226) *Morphisms of High Dimensional Hypersurfaces.*
David Sheppard, MIT (982-14-78)

9:45AM (227) *A new fast and robust technique for pricing and hedging Asian options.* Preliminary report.
Georgios Vasileiou Dalakouras, University of Michigan (982-90-267)

10:00AM (228) *Generalized Proximal Aiming and Weak Invariance for Euler Solutions of Cauchy Problems.*
Gnana Bhaskar Tenali* and **V Lakshmkantham**, Florida Institute of Technology (982-34-269)

10:15AM (229) *Stability of Competitive Neural Networks.* Preliminary report.
Semen Koksai, Florida Tech (982-34-280)

Invited Address

11:00 AM – 11:50 AM **Room 119 (Auditorium), Business Administration**

(230) *Decoding the dance of your dendritic spines.*
Steven J. Cox, Rice University (982-92-02)

Invited Address

1:30 PM – 2:20 PM **Room 119 (Auditorium), Business Administration**

(231) *Basic principles for convergence of adaptive finite element methods and applications to the Stokes Problem.*
Ricardo H. Nochetto, University of Maryland, College Park (982-65-05)

Special Session on Algebraic and Enumerative Combinatorics, IV

2:30 PM – 5:20 PM **Room 119 (Auditorium), Business Administration**

Organizers: **James Haglund**, University of Pennsylvania
Jeff B. Remmel, University of California San Diego

2:30PM (232) *Counting binary trees by ascents and descents.* Preliminary report.
Ira M Gessel, Brandeis University (982-05-173)

3:00PM (233) *Perfect matchings and perfect powers.*
Mihai Ciucu, Georgia Institute of Technology (982-05-273)

3:30PM (234) *Two Injection-based Proofs for a Conjecture of Simion and Sagan.*
Miklos Bona*, University of Florida, and **Bruce E. Sagan**, Michigan State University (982-05-86)

- 4:00PM *Permutations Which Avoid 1243 and 2143, Continued Fractions, and Chebyshev Polynomials.* (235)
Eric S Egge*, Gettysburg College, and **Toufik Mansour**, Université Bordeaux 1 (982-05-38)
- 4:30PM *The subword complexity of a class of infinite binary words.* (236)
Irina Gheorghiciuc, University of Pennsylvania (982-05-272)
- 5:00PM *Prefix exchanging and pattern avoiding involutions.* (237)
 Preliminary report.
Aaron D. Jaggard, University of Pennsylvania (982-05-243)

Special Session on Commutative Algebra, IV

2:30 PM – 5:20 PM Room 122, Business Administration

Organizers: **Heath M. Martin**, University of Central Florida
Stephanie A. Fitchett, Florida Atlantic University

- 2:30PM *Relative cohomology and semi-bounded Ext.* (238)
 Preliminary report.
Oana Veliche, Purdue University (982-13-194)
- 3:00PM *Algorithmic computation of (i,j) -Uniformity by Chow Forms.* (239)
Juan C Migliore, University of Notre Dame, and **Chris Peterson***, Colorado State University (982-13-98)
- 3:30PM *A New Approach to Alexander-Hirshowitz Theorem Using Methods of Lorentz-Lorentz.* Preliminary report. (240)
Anamaria Dent, Colorado State University (982-14-249)
- 4:00PM *Failure of cancellation for quartic and higher-degree orders.* (241)
Ryan Karr, University of Nebraska-Lincoln (982-13-277)
- 4:30PM *Vanishing of Cohomology in Injective Complexes.* Preliminary report. (242)
Emanoil Theodorescu, University of Missouri, Columbia (982-13-274)
- 5:00PM *A construction for subgroups of finite abelian groups.* (243)
Markus Schmidmeier, Florida Atlantic University (982-16-281)

Special Session on Functional and Harmonic Analysis of Wavelets, Frames and their Applications, IV

2:30 PM – 4:50 PM Room 121, Business Administration

Organizers: **Deguang Han**, University of Central Florida
Manos I. Papadakis, University of Houston

- 2:30PM *Bilinear pseudodifferential operators on modulation spaces.* (244)
Arpad Benyi, University of Massachusetts Amherst, and **Kasso A. Okoudjou***, Georgia Institute of Technology (982-47-229)
- 3:00PM *Density of weighted wavelet frames.* (245)
Christopher Heil*, Georgia Tech, and **Gitta Kutyniok**, University of Paderborn (982-42-76)
- 3:30PM *Group action on \mathbb{R}^n and frames.* Preliminary report. (246)
Gestur Olafsson, Louisiana State University (982-46-181)

- 4:00PM *Orthogonal Lifting: Constructing New (Symmetric) Nonseparable Orthogonal Wavelets.* Preliminary report. (247)
Eugene Belogay, Honors College, Florida Atlantic University (982-42-226)
- 4:30PM *Motion selective 3-D wavelet frames for video processing.* (248)
Ivan W Selesnick, Polytechnic University (982-94-286)

Special Session on Mathematical Neuroscience, IV

2:30 PM – 4:30 PM Room 116, Business Administration

Organizers: **Steve J. Cox**, Rice University
Richard Bertram, Florida State University

2:30PM Demo/Discussion - Steve Cox

Special Session on Invariants of Knots and Low-Dimensional Manifolds, IV

2:30 PM – 5:20 PM Room 221, Business Administration

Organizers: **J. Scott Carter**, University of South Alabama
Masahico Saito, University of South Florida

- 2:30PM *Hopf-algebra objects and 3-manifolds.* Preliminary report. (249)
Fernando J. O. Souza, University of Iowa (982-57-254)
- 3:00PM *Integral bases for TQFT Modules and unimodular representations of mapping class groups.* (250)
Patrick M Gilmer*, Louisiana State University, **Gregor Masbaum**, Institut de Mathématiques de Jussieu (UMR 7586 du CNRS), and **Paul van Wamelen**, Louisiana State University (982-57-172)
- 3:30PM *Search for finite length TQFT's for the Casson Invariant.* (251)
Thomas Kerler, The Ohio State University (982-57-237)
- 4:00PM *Three-manifold invariants with values in the cyclotomic completion of the polynomial ring.* Preliminary report. (252)
Thang T. Le, SUNY Buffalo (982-57-207)
- 4:30PM *On the Combinatorics of Legendrian knots.* Preliminary report. (253)
Oliver T Dasbach, LSU (982-57-234)
- 5:00PM *The universal order one invariant of framed knots in the total spaces of S^1 -bundles over orientable surfaces $F \neq S^2, S^1 \times S^1$.* (254)
Vladimir V Chernov, Dartmouth College (982-57-195)

Special Session on Homotopy Theory and Geometric Topology, IV

2:30 PM – 5:20 PM Room 220, Business Administration

Organizers: **Alexander N. Dranishnikov**, University of Florida
James E. Keesling, University of Florida
Yuli B. Rudyak, University of Florida

- 2:30PM *Affine Linking Numbers and Causality Relations for Wave Fronts.* (255)
Vladimir V. Chernov (Tchernov)*, Dartmouth College, and **Yuli B. Rudyak**, University of Florida (982-57-82)

- 3:00PM *Discrete Torsion for the Orbifold Sigma Genus.*
(256) **Christopher P French***, University of Illinois at Urbana-Champaign, and **Matthew Ando**, University of Illinois at Urbana Champaign (982-55-251)
- 3:30PM *Free C_+ -actions on C^3 are translations.*
(257) **Shulim Kaliman**, University of Miami (982-14-25)
- 4:00PM *Presentability of noneffective orbifolds.*
(258) **David S Metzler**, University of Florida (982-55-105)
- 4:30PM *The topology of the space of symplectic balls in rational 4-manifolds.*
(259) **Franois Lalonde**, Université de Montréal, and **Martin Pinsonnault***, University of Toronto (982-53-212)
- 5:00PM *Isotopic realizability of maps factored through hyperplane.* Preliminary report.
(260) **Sergey Melikhov**, University of Florida (982-57-270)

Special Session on Asymptotics of Integrable Partial Differential Equations, Riemann-Hilbert Problem and Related Topics, IV

2:30 PM – 5:15 PM Room 115, Business Administration

Organizers: **Ken T. R. McLaughlin**, University of North Carolina at Chapel Hill and University of Arizona
Alexander Tovbis, University of Central Florida

- 2:30PM *Long-time asymptotics for solutins of the NLS equation with initial data in a weighted Sobolev space.*
(261) **P Deift***, Courant Institute, and **X Zhou**, Duke University (982-35-263)
- 3:15PM *Singular sector of the Burgers-Hopf hierarchy and integrable deformations of hyperelliptic curves.*
(262) **Yuji Kodama**, Ohio State University (982-58-122)
- 4:00PM *Some remarks on the Riemann-Hilbert problem in inverse scattering theory.* Preliminary report.
(263) **Martin Klaus**, Virginia Tech (982-34-216)
- 4:45PM *Riemann-Hilbert problems, Whitham equations and Bergmann kernel.*
(264) **Tamara Grava**, SISSA (982-35-156)

Special Session on Function Spaces, Singular Integrals and Applications to PDEs, IV

2:30 PM – 5:50 PM Room 107, Business Administration

Organizers: **Marius Mitrea**, University of Missouri-Columbia
Dorina Mitrea, University of Missouri-Columbia

- 2:30PM *Some conformally flat spin manifolds and Green's functions and Dirac operators.* Preliminary report.
(265) **John Ryan***, University of Arkansas, and **Soeren Krausshar**, Ghent University (982-42-170)
- 3:00PM *Atomic and molecular decompositions of anisotropic Triebel-Lizorkin spaces.*
(266) **Marcin Bownik***, University of Michigan, and **Kwok-Pun Ho**, Hong Kong University of Science and Technology (982-42-108)
- 3:30PM *The Poisson's Problem with Robin Boundary Condition in non-smooth domains.* Preliminary report.
(267) **Loredana Lanzani**, University of Arkansas, and **Oswaldo D Mendez***, University of Texas (982-46-246)

- 4:00PM *Analysis in Besov-Morrey spaces and applications to the Navier-Stokes equation.*
(268) **Anna L Mazzucato**, Yale University (982-35-244)
- 4:30PM *The Inhomogeneous Neumann Problem in Lipschitz Domains.*
(269) **Daniel Z. Zanger**, Booz Allen Hamilton (982-35-116)
- 5:00PM *Selfadjoint extensions of elliptic operators on conic manifolds.*
(270) **Juan B Gil*** and **Gerardo A Mendoza**, Temple University (982-35-224)
- 5:30PM *Rellich's theorem in irregular domains.*
(271) **David E Edmunds**, University of Sussex, and **Ritva Hurri-Syrjanen***, University of Helsinki (982-46-41)

Special Session on Computational Methods in Analysis, I

2:30 PM – 3:20 PM Room 218, Business Administration

Organizer: **George A. Anastassiou**, University of Memphis

- 2:30PM *Local behavior of trigonometric polynomials.* Preliminary report.
(272) **Dimiter P. Dryanov**, Universite de Montreal, **Mohammed Amer Qazi***, Tuskegee University, and **Qazi I. Rahman**, Universite de Montreal (982-41-27)
- 3:00PM *Slant differentiability and smoothing functions of nonlinear operators: new tools in numerical functional analysis.*
(273) **M. Zuhair Nashed**, University of Central Florida (982-47-265)

John L. Bryant
Associate Secretary
Tallahassee, Florida