
Program of the Sessions

Columbus, Ohio, September 21-23, 2001

Friday, September 21

Meeting Registration

12:30 PM – 4:30 PM MW 154, Mathematics Tower (MW)

AMS Exhibit and Book Sale

12:30 PM – 4:30 PM MW 724, Mathematics Tower (MW)

Special Session on Algebraic Cycles, Algebraic Geometry, I

1:30 PM – 5:15 PM UH 0151, University Hall (UH)

Organizer: **Roy Joshua**, Ohio State University

- 1:30PM *Equivariant Todd Classes for Toric Varieties.*
(1) **Jean-Luc Brylinski**, Penn State University, and **Bin Zhang***, SUNY at Stony Brook (969-14-131)
- 2:30PM *Combinatorics of the Toric Hilbert Scheme.*
(2) **Rekha R Thomas***, University of Washington, and **Diane Maclagan**, Institute for Advanced Study (969-05-185)
- 3:30PM *(Equivariant) vectorbundles on certain exotic 3-spaces.*
(3) **Peter Russell**, McGill University (969-14-200)
- 4:30PM *K-Theory and Standard Monomial Theory.*
(4) Preliminary report.
Venkatramani Lakshmibai*, Northeastern University, and **Peter Littelmann**, University of Wuppertal (969-14-211)

Special Session on Coding Theory and Designs, I

1:30 PM – 4:50 PM UH 0090, University Hall (UH)

Organizers: **Tom Dowling**, Ohio State University
Dijen Ray-Chaudhuri

- 1:30PM *Designs in Shortened Additive GF(4) Codes.*
(5) Preliminary report.
Vera Pless* and **Jon-Lark Kim**, University of Illinois-Chicago (969-94-162)

- 2:00PM *New lower bounds on the maximum number of mutually orthogonal Steiner triple systems.*
(6) Preliminary report.
Jeff Dinitz*, University of Vermont, and **Peter Dukes**, Calif. Institute of Technology (969-05-233)
- 2:30PM *On abelian relative difference sets which are extensions of difference sets with classical parameters.* Preliminary report.
(7) **Nobuo Nobu Nakagawa, Naka**, Department of Mathematics Faculty of Science and Technology (969-05-66)
- 3:00PM *Higher Weights and Nonbinary Self-Dual Codes.*
(8) **Steven T Dougherty**, University of Scranton, and **Aaron Gulliver***, University of Victoria (969-94-220)
- 3:30PM *A technique for constructing non-embeddable quasi-residual designs.*
(9) **Yury J. Ionin*** and **Kirsten Mackenzie-Fleming**, Central Michigan University (969-05-246)
- 4:00PM *An Existence Theorem for Group Divisible 2-Designs of Large Order.*
(10) **Hedvig Mohacsy*** and **Dijen K Ray-Chaudhuri**, The Ohio State University (969-05-250)
- 4:30PM *Extremal problems under dimension constraints.*
(11) Preliminary report.
Rudolf Ahlswede*, **Harout Aydinian** and **Levon H Khachatryan**, University of Bielefeld (969-05-117)

Special Session on Commutative Algebra, I

1:30 PM – 5:20 PM UH 0147, University Hall (UH)

Organizers: **Evan Houston**, University of North Carolina, Charlotte
Alan Loper, Ohio State University

- 1:30PM Discussion
- 2:00PM *Non-standard Tight Closure and Symbolic Powers.*
(12) **Hans Schoutens**, Ohio State University (969-13-75)
- 2:30PM *Trace Properties and Integral Domains, II.*
(13) Preliminary report.
Thomas G Lucas*, University of North Carolina Charlotte, and **Abdeslam Mimouni**, University of Fez (969-13-194)

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 22, Issue 3 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.

- 3:00PM *Coherent Gaussian Rings*. Preliminary report.
(14) **Sarah Glaz**, University of Connecticut (969-13-195)
- 3:30PM *Zero-Divisor Graphs of Commutative Rings*.
(15) Preliminary report.
David F Anderson*, University of Tennessee, **Ron Levy** and **Jay Shapiro**, George Mason University (969-13-126)
- 4:00PM *Decompositions of modules over rings of bounded representation type*.
(16) **Meral Arnavut***, SUNY Fredonia and University of Nebraska-Lincoln, and **Sylvia Wiegand**, University Of Nebraska-Lincoln (969-13-229)
- 4:30PM *Some Finiteness Conditions on Overrings of an Integral Domain*. Preliminary report.
(17) **Robert Gilmer**, Florida State University (969-13-34)
- 5:00PM *Representation Type of Commutative Noetherian Rings: Global Wildness*.
(18) **Lee C Klingler***, Florida Atlantic University, and **Lawrence S Levy**, University of Wisconsin-Madison (969-13-216)

- 2:00PM *Generating classical groups*. Preliminary report.
(27) **Robert M Guralnick**, University of Southern California, and **Corneliu G Hoffman***, Bowling Green State University (969-20-138)
- 2:30PM *A Phan-type theorem for the symplectic group*.
(28) **Ralf Gramlich**, Eindhoven University of Technology, **Corneliu Hoffman** and **Sergey Shpectorov***, Bowling Green State University (969-20-184)
- 3:00PM *A new approach to the $k(GV)$ -problem*.
(29) **Thomas Michael Keller**, Southwest Texas State University (969-20-70)
- 3:30PM *The Number of Irreducible Character Degrees of Solvable Groups Satisfying the One-Prime Hypothesis*.
(30) **Mark L Lewis**, Kent State University (969-20-19)
- 4:00PM *Clifford classes for isoclinic groups*. Preliminary report.
(31) **Alexandre Turull**, University of Florida (969-20-199)
- 4:30PM *Regular orbits of induced modules*.
(32) **Thomas R. Wolf**, Ohio University (969-20-198)

Special Session on Cryptography and Computational and Algorithmic Number Theory, I

1:30 PM – 5:20 PM UH 0047, University Hall (UH)

Organizers: **Eric Bach**, University of Wisconsin-Madison
Jonathan Sorenson, Butler University

- 1:30PM *Some Recent Results on Probable Prime Testing*.
(19) Preliminary report.
Siguna M. Mueller, University of Klagenfurt (969-11-215)
- 2:00PM *Definite quadratic forms over $\mathbb{F}_q[x]$* . Preliminary report.
(20) **Larry J Gerstein**, University of California, Santa Barbara (969-11-107)
- 2:30PM *On fixed points for discrete logarithms*. Preliminary report.
(21) **Mariana Campbell**, University of California, Berkeley, and **Carl Pomerance***, Bell Laboratories (969-11-179)
- 3:00PM Break
- 3:30PM *Virtual logarithms*.
(22) **Oliver A Schirokauer**, Oberlin College (969-11-213)
- 4:00PM *On group order distributions for abelian varieties of low dimension*.
(23) **Annegret Weng**, Institut fuer Experimentelle Mathematik (969-11-193)
- 4:30PM *Products of like-indexed terms in two binary recurrences*. Preliminary report.
▶ (24) **Florian Luca**, Unidad Morelia, and **Gary Walsh***, University of Ottawa (969-11-44)
- 5:00PM *Construction of elliptic curves over finite fields with known number of points*.
(25) **Amod Agashe**, University of Texas, Austin, **Kristin E. Lauter*** and **Ramarathnam Venkatesan**, Microsoft Research (969-11-232)

Special Session on Group Theory, I

1:30 PM – 4:50 PM BE 0394, Baker Systems Engineering (BE)

Organizers: **Koichiro Harada**, Ohio State University
Surinder Sehgal, Ohio State University
Ronald Solomon, Ohio State University

- 1:30PM *A geometry based proof of Phan's Theorem*.
(26) **Curtis D. Bennett*** and **Sergey Shpectorov**, Bowling Green State University (969-20-169)

Special Session on L^2 Methods in Algebraic and Geometric Topology, I

1:30 PM – 5:15 PM BE 0184, Baker Systems Engineering (BE)

Organizers: **Dan Burghilea**, Ohio State University
Michael Davis, Ohio State University

- 1:30PM *Spectral flow and Dixmier traces*.
(33) **Alan L Carey***, University of Adelaide, **John Phillips**, University of Victoria, and **Fyodor Sukochev**, Flinders University (969-58-164)
- 2:30PM *On the zero-in-the-spectrum-conjecture*.
(34) **Michael Farber**, Tel Aviv University (969-57-191)
- 3:30PM *Semi-classical asymptotic for determinants of operators almost elliptic with parameter*.
(35) **Maxim Braverman**, Northeastern University (969-58-57)
- 4:30PM *On the L^2 spectrum of periodic differential operators*.
(36) **Leonid Friedlander**, University of Arizona (969-58-238)

Special Session on Proof Theory and the Foundations of Mathematics, I

1:30 PM – 5:15 PM UH 0082, University Hall (UH)

Organizer: **Timothy Carlson**, Ohio State University

- 1:30PM *Lambda-calculus with internalization*. Preliminary report.
▶ (37) **Sergei N Artemov**, The City University of New York Graduate Center (969-03-212)
- 2:30PM *Relating the Veblen and Mahlo hierarchies*.
(38) **Michael Rathjen**, University of Leeds (969-03-110)
- 3:30PM *Hilbert's Consistency Proofs*.
(39) **Wilfried Sieg**, Carnegie Mellon University (969-03-109)
- 4:30PM *Envisioning the Triumph of Constructive Mathematics*.
▶ (40) **Matthew Frank**, University of Chicago (969-03-15)

Special Session on Rings and Modules, I

1:30 PM – 5:20 PM UH 0043, University Hall (UH)

Organizers: **S. K. Jain**, Ohio University
Tariq Rizvi, Ohio State University

Program of the Sessions – Columbus, OH, Friday, September 21 (cont'd.)

- 1:30PM *Torsion freeness of units of $1 + A(G)A(N)$.* Preliminary report.
(41) **Sudarshan K Sehgal**, University of Alberta (969-16-96)
- 2:00PM *On the commutation of envelopes and covers of modules.* Preliminary report.
(42) **Philipp S Rothmaler**, Ohio State University (969-16-50)
- 2:30PM *The pure-injective envelope of a Camillo-Krause ring.* Preliminary report.
(43) **Ivo Herzog**, Ohio State University at Lima (969-16-36)
- 3:00PM *Semiprime Goldie rings with one-sided ideals CS.*
(44) **Dinh V. Huynh, Surender K. Jain and Sergio R. López-Permouth***, Ohio University (969-16-157)
- 3:30PM *Reversible and Symmetric Rings.*
(45) **Greg Marks**, St. Louis University (969-16-88)
- 4:00PM *Homological Properties of Cohen-Macaulay Graded Algebras.*
(46) **Izuru Mori**, Purdue University (969-16-130)
- 4:30PM *Forcing Linearity Numbers.*
(47) **C. J. Maxson**, Texas A&M University (969-16-43)
- 5:00PM *On rings satisfying the Armendariz property for skew polynomials.*
(48) **Tai Keun Kwak***, Daejin University, and **Chan Yong Hong**, Kyunghee University (969-16-129)

Special Session on Spectral Theory of Schrödinger Operators, I

1:30 PM – 5:20 PM UH 0086, University Hall (UH)

Organizers: **Boris Mityagin**, Ohio State University
Sergei Novikov, University of Maryland

- 1:30PM *On Inverse Sturm-Liouville Problems with Complex Potentials.* Preliminary report.
(49) **Malcolm Brown**, Cardiff University, **Ian Knowles** and **Rudi Weikard***, University of Alabama at Birmingham (969-34-161)
- 2:00PM *Smoothness of periodic Schrödinger potential and decay rate of spectral gaps.*
(50) **Plamen Djakov**, Sofia University, and **Boris Mityagin***, The Ohio State University (969-47-106)
- 3:00PM *Vector bundles and Lax operators on algebraic curves.*
(51) **Igor Krichever**, Dept Math Columbia Univ, New York, and Landau Physics Institute, Moscow (969-47-230)
- 3:30PM *On algebro-geometric matrix-valued KdV potentials.* Preliminary report.
(52) **Fritz Gesztesy**, University of Missouri (969-34-123)
- 4:00PM *The Interaction of Phases in KdV Modulations.*
(53) **Fei-Ran Tian**, Ohio State University (969-35-114)
- 4:30PM *First KdV integrals and absolutely continuous spectrum for 1-D Schrödinger operator.*
(54) **Mikhail V Novitskii**, The University of North Carolina at Charlotte (969-47-176)
- 5:00PM *Feynman-Kac propagators for the heat equation with a time-dependent potential.*
(55) **Archil Gulisashvili**, Ohio University (969-35-158)

Special Session on Quantum Topology, I

2:00 PM – 4:20 PM BE 0285, Baker Systems Engineering (BE)

Organizer: **Thomas Kerler**, Ohio State University

- 2:00PM *Monoideal and braided structures in near-group categories.* Preliminary report.
(56) **Jacob Siehler**, Virginia Tech (969-18-262)

- 2:30PM *A (co)sheaf approach to topological field theory.* Preliminary report.
(57) **Frank S Quinn**, Virginia Tech (969-57-239)
- 3:00PM Break
- 3:30PM *Categorical Deformations and Topological Invariants.*
(58) **David N Yetter**, Kansas State University (969-18-241)
- 4:00PM *Relativistic Spin neta and applications.*
(59) **Louis Crane**, Kansas State University (969-81-231)

Special Session on Differential Geometry and Applications, I

2:30 PM – 4:25 PM BE 0188, Baker Systems Engineering (BE)

Organizers: **Andrzej Derdzinski**, Ohio State University
Fangyang Zheng, Ohio State University

- 2:30PM *Circular Billiard Tables, Conjugate Loci, and a Cardioid.*
(60) **Richard L Bishop**, Univ. of Illinois at Urbana-Champaign (969-53-159)
- 3:00PM *Generalized Sasaki Distance and Metric Characterization of Riemannian Spaces.*
(61) **Igor G Nikolaev**, University of Illinois at U-C (969-53-101)
- 3:30PM *Computational aspects of infinite type integrable surfaces.* Preliminary report.
(62) **Ivan C Sterling**, St Mary's College of Maryland (969-53-137)
- 4:00PM *Ricci tensor of Pseudo-cylindric Riemannian Metrics.*
(63) **A. Raouf Chouikha**, University of Paris-Nord (969-53-31)

Invited Address

5:30 PM – 6:20 PM EA 160, Math Annex (EA)

- (64) *Billiards in rational polygons.*
Alex Eskin, University of Chicago

Saturday, September 22

Meeting Registration

8:30 AM – 4:30 PM MW 154, Mathematics Tower (MW)

Special Session on Algebraic Cycles, Algebraic Geometry, II

8:30 AM – 11:15 AM UH 0151, University Hall (UH)

Organizer: **Roy Joshua**, Ohio State University

- 8:30AM *Real Regulators on Milnor Complexes.*
(65) **James D Lewis**, University of Alberta (969-14-121)
- 9:30AM *Period Integrals and Feynman amplitudes.* Preliminary report.
(66) **Prakash Belkale**, University of Utah, and **Patrick G Brosnan***, University of California, Los Angeles (969-14-218)
- 10:30AM *Motives in characteristic zero.*
(67) **Evangelos Mouroukos**, University of Michigan (969-14-210)

Special Session on Coding Theory and Designs, II

8:30 AM – 11:20 AM UH 0090, University Hall (UH)

Organizers: **Tom Dowling**, Ohio State University
Dijen Ray-Chaudhuri

- 8:30AM (68) *Assmus-Mattson Theorem on Additive Codes over GF(4)*. Preliminary report.
Jon-Lark Kim* and **Vera Pless**, University of Illinois-Chicago (969-94-180)
- 9:00AM (69) *Schur rings and circulant graphs I. From algebraic background to symmetry in circulants*.
Andrew J Woldar, Villanova University (969-05-226)
- 9:30AM (70) *Schur rings and circulant graphs: II. Automorphism groups of circulant graphs with a prime-power number of vertices*.
Mikhail Klin*, Ben-Gurion University of the Negev, and **Reinhard Poeschel**, Technological University of Dresden (969-05-225)
- 10:00AM (71) *New partial difference sets in abelian p -groups*.
Xiang-dong Hou, Wright State University (969-05-65)
- 10:30AM (72) *Some new results on perfect sequences and a proof of the Lin and Gong conjectures*. Preliminary report.
K T Arasu*, Wright State University, **J F Dillon**, National Security Agency, and **K J Player**, Wright State University (969-05-208)
- 11:00AM (73) *The subconstituent algebra of a distance-regular graph*.
Paul M Terwilliger, University of Wisconsin (969-05-68)

Special Session on Commutative Algebra, II

8:30 AM – 11:20 AM UH 0147, University Hall (UH)

Organizers: **Evan Houston**, University of North Carolina, Charlotte
Alan Loper, Ohio State University

- 8:30AM Discussion
- 9:00AM (74) *Building integral domains using power series I*.
William J. Heinzer, Purdue University, **Christel Rotthaus**, Michigan State University, and **Sylvia M. Wiegand***, University of Nebraska (969-13-165)
- 9:30AM (75) *Building integral domains using power series II*. Preliminary report.
William J. Heinzer*, Purdue University, **Christel Rotthaus**, Michigan State University, and **Sylvia M. Wiegand**, University of Nebraska (969-13-166)
- 10:00AM (76) *The half-factorial property in power series extensions*.
Jim Coykendall, North Dakota State University (969-13-141)
- 10:30AM (77) *Well-centered overrings of an integral domain*. Preliminary report.
William Heinzer, Purdue University, and **Moshe Roitman***, University of Haifa (969-13-140)
- 11:00AM (78) *Survival-pairs of commutative rings have the lying-over property*.
Jim Coykendall, North Dakota State University, Fargo, North Dakota 58105-5075, and **David E. Dobbs***, University of Tennessee, Knoxville, Tennessee 37996-1300 (969-13-85)

Special Session on Cryptography and Computational and Algorithmic Number Theory, II

8:30 AM – 11:20 AM UH 0047, University Hall (UH)

Organizers: **Eric Bach**, University of Wisconsin-Madison
Jonathan Sorenson, Butler University

- 8:30AM (79) *Some Computational Results Concerning Yokoi's Conjecture*. Preliminary report.
Jozsef Beck, Rutgers University, **Edlyn Teske**, University of Waterloo, and **Hugh C Williams***, University of Calgary (969-11-182)

- 9:00AM (80) *Conditional and Unconditional Fundamental Unit Computation in Real Quadratic Fields*. Preliminary report.
Michael J. Jacobson, Jr.*, University of Manitoba, and **Hugh C. Williams**, University of Calgary (969-11-181)
- 9:30AM (81) *Recent results on the computation of zeta values at negative integers*. Preliminary report.
Joshua R Holden, Rose-Hulman Institute of Technology (969-11-168)
- 10:00AM Break
- 10:30AM (82) *Unit Computation in Purely Cubic Function Fields*. Preliminary report.
Yoonjin Lee, University of Delaware, and **Renate Scheidler***, University of Calgary (969-11-167)
- 11:00AM (83) *On the iteration of certain quadratic maps over GF(p)*.
Troy MJ Vasiga* and **Jeffrey O Shallit**, University of Waterloo (969-11-74)

Special Session on L^2 Methods in Algebraic and Geometric Topology, II

8:30 AM – 11:15 AM BE 0184, Baker Systems Engineering (BE)

Organizers: **Dan Burghel**, Ohio State University
Michael Davis, Ohio State University

- 8:30AM (84) *Betti number growth for coverings*.
Bryan F Clair*, Saint Louis University, and **Kevin M Whyte**, Univ. Of Illinois - Chicago (969-54-51)
- 9:30AM (85) *Zero divisors and approximating L^2 -Betti numbers*.
Peter A Linnell, Virginia Tech (969-46-155)
- 10:30AM (86) *Refined semiclassical asymptotics and a vanishing theorem for higher traces*. Preliminary report.
Yuri A Kordyukov, Department of Mathematics, Ufa State Aviation Technical University, Ufa, Russia, **Varghese Mathai**, Department of Mathematics, University of Adelaide, Adelaide, Australia, and **Mikhail A Shubin***, Department of Mathematics, Northeastern University, Boston (969-58-147)

Special Session on Multivariate Generating Functions and Automatic Computation, I

8:30 AM – 10:50 AM BE 0136, Baker Systems Engineering (BE)

Organizer: **Robin Pemantle**, Ohio State University

- 8:30AM Session Introduction
- 9:00AM (87) *Asymptotic enumeration of integer partitions by parameters*. Preliminary report.
E. Rodney Canfield, University of Georgia (969-05-87)
- 9:30AM (88) *Asymptotics of multivariate generating functions*.
Robin Pemantle, Ohio State University, and **Mark C Wilson***, University of Auckland (969-05-82)
- 10:30AM (89) *A multivariate version of Flajolet-Odlyzko's transfer theorem and its applications to random maps*.
Jason Z Gao*, Carleton University, and **Nick Wormald**, University of Melbourne (969-05-41)

Special Session on Proof Theory and the Foundations of Mathematics, II

8:30 AM – 11:15 AM BE 0291, Baker Systems Engineering (BE)

Organizer: **Timothy Carlson**, Ohio State University

- 8:30AM (90) *Applied foundations: recent progress in proof mining.*
Ulrich W Kohlenbach, Department of Computer Science, University of Aarhus (969-03-92)
- 9:30AM (91) *Provable Recursiveness and Complexity.*
Stanley S Wainer, University of Leeds UK (969-03-173)
- 10:30AM (92) *Update procedures and the 1-consistency of arithmetic.*
Jeremy Avigad, Carnegie Mellon University (969-03-177)

Special Session on Quantum Topology, II

8:30 AM – 11:20 AM **BE 0285, Baker Systems Engineering (BE)**

- Organizer: **Thomas Kerler**, Ohio State University
- 8:30AM (93) *Quantum deformations of fundamental groups.*
 Preliminary report.
Uwe Kaiser, Boise State University (969-57-153)
- 9:00AM (94) *Shadow World Evaluation of the Yang-Mills Measure.*
Charles Frohman, University of Iowa, and **Joanna Kania-Bartoszyńska***, Boise State University (969-57-39)
- 9:30AM (95) *Lagrangian approximation of Fox p -colorings of tangles; Fox approximation of rational $\frac{p}{q}$ -moves.*
 Preliminary report.
Jozef H Przytycki, GWU (969-57-224)
- 10:00AM Break
- 10:30AM (96) *3-dimensional topology inspired by number theory.*
 Preliminary report.
Adam S Sikora, CRM Montreal (969-57-209)
- 11:00AM (97) *Asymptotics of the Turaev-Viro Invariant.*
 Preliminary report.
Charles D Frohman*, The University of Iowa, and **Thomas Kerler**, Ohio State University (969-57-151)

Special Session on Rings and Modules, II

8:30 AM – 11:20 AM **UH 0051, University Hall (UH)**

- Organizers: **S. K. Jain**, Ohio University
Tariq Rizvi, Ohio State University
- 8:30AM (98) *Some new results and questions related to Koethe's nil ideal problem.*
Edmund R. Puczyłowski, Institute of Mathematics, University of Warsaw (969-16-154)
- 9:00AM (99) *Krull-Schmidt categories with the Artinian condition on morphisms.* Preliminary report.
Nguyen Viet Dung*, Ohio University - Zanesville, and **Jose Luis Garcia**, University of Murcia, Spain (969-16-124)
- 9:30AM (100) *Costar Modules.*
Robert R Colby and **Kent R Fuller***, University of Iowa (969-16-122)
- 10:00AM (101) *Essential Extensions which are FI-Extending.*
Gary F Birkenmeier*, University of Louisiana at Lafayette, **Jae K Park**, Busan National University, and **S. Tariq Rizvi**, Ohio State University at Lima (969-16-90)
- 10:30AM (102) *Structure of some Noetherian SI-rings.*
Dinh V Huynh, Ohio University (969-16-204)
- 11:00AM (103) *On Additive Rank Functions.*
John A Beachy, Northern Illinois University (969-16-48)

Special Session on Spectral Theory of Schrödinger Operators, II

8:30 AM – 11:20 AM **BE 0130, Baker Systems Engineering (BE)**

- Organizers: **Boris Mityagin**, Ohio State University
Sergei Novikov, University of Maryland
- 8:30AM (104) *Magnetic Schrödinger operators: discreteness of spectrum and strict positivity criteria.* Preliminary report.
Vladimir A Kondratiev, Department of Mechanics and Mathematics, Moscow State University, Moscow, Russia, **Vladimir G Maz'ya**, Department of Mathematics, Linköping University, Sweden, and **Mikhail A Shubin***, Department of Mathematics, Northeastern University, Boston, MA (969-35-149)
- 9:00AM (105) *Hydrogen atom in magnetic field: approximating eigenfunctions.*
Alexander V Turbiner, Nuclear Science Institute, UNAM (969-35-237)
- 9:30AM (106) *2D Schroedinger Operators, Solitons, Spectral Symmetries.*
Sergey Novikov, University of Maryland, College Park, USA & Landau Institute of the Russian Academy of Sciences, Moscow, Russia (969-47-186)
- 10:30AM (107) *Perturbation Formulae for the Two-Dimensional Periodic Magnetic Schrödinger Operator.*
 Preliminary report.
Yulia E Karpeshina, UAB (969-35-142)
- 11:00AM (108) *Behavior of dispersion curves near spectral edges and properties of periodic elliptic equations.*
Peter Kuchment*, Texas A&M University, **Vassilis Papanicolaou**, Wichita State University, and **Yehuda Pinchover**, Technion, Israel (969-35-150)

Special Session on Fractals, I

8:30 AM – 11:20 AM **BE 0192, Baker Systems Engineering (BE)**

- Organizer: **Gerald Edgar**, Ohio State University
- 8:30AM (109) *Multifractal products of stochastic processes.*
Rolf Riedi*, Rice Univ, **P. Mannersalo**, Melbourne, Australia, and **I. Norros**, Helsinki, Finland (969-60-242)
- 9:00AM (110) *Sierpinski Pedal Triangles.* Preliminary report.
Xin-Min Zhang*, University of South Alabama, **Richard L Hitt**, Univ. of South Alabama, and **Jiu Ding**, Univ. of Southern Mississippi (969-51-29)
- 9:30AM (111) *On the analysis on Sierpinski gaskets.*
Alexander Teplyaev, NSF/UC Riverside (969-31-14)
- 10:00AM (112) *Inside the Lévy dragon.*
Scott Bailey*, **Theodore Kim** and **Robert S Strichartz**, Cornell University (969-28-55)
- 10:30AM (113) *Exact Hausdorff Measure of the Graph of Brownian Motion on Some Nested Fractals.* Preliminary report.
Yimin Xiao, Michigan State University (969-60-89)
- 11:00AM (114) *Complex Dimensions of Self-Similar Fractals.*
Michel L. Lapidus, University of California (969-37-42)

Special Session on Differential Geometry and Applications, II

8:30 AM – 11:25 AM **BE 0188, Baker Systems Engineering (BE)**

- Organizers: **Andrzej Derdzinski**, Ohio State University
Fangyang Zheng, Ohio State University

- 8:30AM (115) *Lagrangian Helicoids.*
David E Blair, Michigan State University (969-53-72)
- 9:00AM (116) *The $S^2 \times S^1$ singularity of the Ricci flow.* Preliminary report.
Tom Ilmanen, ETH - Zürich, and **Dan Knopf***, University of Wisconsin - Madison (969-53-116)
- 9:30AM (117) *Compactifications of hermitian symmetric spaces and the moment map.* Preliminary report.
Lizhen Ji, Univ of Michigan, Ann Arbor (969-53-80)
- 10:00AM (118) *Dependence of spectral invariants on geometric moduli.*
Chris M Judge, Indiana University (969-53-103)
- 10:30AM (119) *Virasoro conjecture for Gromov-Witten Invariants.* Preliminary report.
Xiaobo Liu, University of Notre Dame (969-53-54)
- 11:00AM (120) *Skew loops and quadric hypersurfaces.*
Bruce Solomon*, Indiana University, **Mohammad Ghomi**, University of South Carolina, and **Serge Tabachnikov**, Penn State University (969-53-127)

AMS Exhibit and Book Sale

8:30 AM – 4:30 PM MW 724, Mathematics Tower (MW)

Special Session on Group Theory, II

9:00 AM – 11:20 AM BE 0394, Baker Systems Engineering (BE)

Organizers: **Koichiro Harada**, Ohio State University
Surinder Sehgal, Ohio State University
Ronald Solomon, Ohio State University

- 9:00AM (121) *From alternating groups to the Monster.* Preliminary report.
Christopher S Simons, Rowan University (969-20-53)
- 9:30AM (122) *Ascending HNN extensions of polycyclic groups are residually finite.*
Tim Hsu*, San José State University, and **Daniel T Wise**, McGill University (969-20-205)
- 10:00AM (123) *Short proofs of embeddings into exceptional groups of Lie type.*
Alexander J Ryba, Queens College, CUNY (969-20-95)
- 10:30AM (124) *Z_3 -twisted representations of lattice vertex operator algebras.*
Ching Hung Lam*, National Cheng Kung University, Taiwan, and **Hikomichi Yamada**, Hitotsubashi University, Japan (969-17-81)
- 11:00AM (125) *Norton's trace formula for the Griess algebra and the modular invariance of the moonshine module.*
Atsushi Matsuo, Department of Mathematical Sciences, Graduate School of Mathematical Sciences, University of Tokyo (969-17-108)

Special Session on Stochastic Modeling in Financial Mathematics, I

9:30 AM – 11:20 AM UH 0038, University Hall (UH)

Organizer: **Ronnie Sircar**, Princeton University

- 9:30AM (126) *Analysis of Dependent Defaults via Intensity Based Approach, with Applications to Valuation of Basket Credit Derivatives.*
Tomasz R. Bielecki*, Northeastern Illinois University, and **Marek Rutkowski**, Warsaw University of Technology (969-60-172)
- 10:00AM (127) *Stochastic Volatility Asymptotics.*
Jean-Pierre Fouque, North Carolina State University (969-60-60)

- 10:30AM (128) *First Passage Times of a Jump Diffusion Process.*
Steve Kou, Columbia University, and **Hui Wang***, Brown University (969-60-59)
- 11:00AM (129) *Optimal execution with nonlinear cost functions and trading-enhanced risk.*
Robert F Almgren, University of Toronto (969-91-214)

Invited Address

11:40 AM – 12:30 PM EA 160, Math Annex (EA)

- (130) *"Fubini's nightmare" in smooth ergodic theory.*
Yakov B. Pesin, Pennsylvania State University

Invited Address

2:00 PM – 2:50 PM EA 160, Math Annex (EA)

- (131) *Pricing and Risk Management in Incomplete Markets.*
Thaleia Zariphopoulou, University of Texas at Austin

Special Session on Algebraic Cycles, Algebraic Geometry, III

3:00 PM – 4:45 PM UH 0151, University Hall (UH)

Organizer: **Roy Joshua**, Ohio State University

- 3:00PM (132) *Kummer elements in central simple algebras.*
Markus Rost, Ohio State University (969-14-247)
- 4:00PM (133) *The gonality stratification and the Kodaira dimension of the moduli space of curves.*
Gavril M Farkas, Univ of Michigan (969-14-163)

Special Session on Coding Theory and Designs, III

3:00 PM – 4:50 PM UH 0090, University Hall (UH)

Organizers: **Tom Dowling**, Ohio State University
Dijen Ray-Chaudhuri

- 3:00PM (134) *Quasi-symmetric Designs with Good Blocks and Intersection Number One.* Preliminary report.
V.C. Mavron, **T.P. McDonough**, The University of Wales, and **M.S. Shrikhande***, Central Michigan University (969-05-18)
- 3:30PM Discussion
- 4:00PM (135) *A Class of Polynomial Codes and a Family of Griesmer Codes.* Preliminary report.
Nuh Aydin* and **Dijen K. Ray-Chaudhuri**, The Ohio State University (969-05-20)
- 4:30PM (136) *Products and Quotients of Association Schemes.*
Sejeong Bang, POSTECH, **Mitsugu Hirasaka**, National Taiwan University, and **Sung Y Song***, Iowa State University (969-05-111)

Special Session on Commutative Algebra, III

3:00 PM – 4:50 PM UH 0147, University Hall (UH)

Organizers: **Evan Houston**, University of North Carolina, Charlotte
Alan Loper, Ohio State University

- 3:00PM (137) *S-Noetherian rings.*
Daniel D Anderson*, The University of Iowa, and **Tiberiu Dumitrescu**, Universitatea București (969-13-63)
- 3:30PM (138) *Another look at Nagata Type theorems.* Preliminary report.
Muhammad Zafrullah, Idaho State University (969-13-190)

- 4:00PM *The Effect of Characteristic on Computing the Integral Closure of a Ring.*
(139)
Chad J McQuinn, Purdue University (969-13-245)
- 4:30PM *Integer-valued polynomials and p -adic analytic functions II.*
(140)
Manjul Bhargava, Clay Mathematics Institute/Princeton University (969-13-256)

- 4:00PM *Tensor product module and modular invariance of VOAs.*
(151)
Miyamoto Masahiko, University of Tsukuba (969-20-118)
- 4:30PM *GNAVOA, I (Groups, nonassociative algebras and vertex operator algebras; part I).*
(152)
Robert L. Griess, Jr., University of Michigan (969-20-201)

Special Session on Stochastic Modeling in Financial Mathematics, II

3:00 PM – 4:50 PM UH 0038, University Hall (UH)

- Organizer: **Ronnie Sircar**, Princeton University
- 3:00PM *Robust numerical approximations for Variational Inequalities arising in mathematical Finance.*
(141)
Agnes Tourin, University of Toronto (969-90-260)
- 3:30PM *A Closed-Form Formula for the Arithmetic Asian Option.*
(142)
Vadim Linetsky, Northwestern University (969-60-146)
- 4:00PM *Optimal bankruptcy time and consumption/investment policies in a utility maximization problem on infinite horizon.*
(143)
Peter Lakner, New York University (969-00-263)
- 4:30PM *Option pricing in the presence of large agents.*
(144)
Preliminary report.
Mattias Jonsson* and **Jussi Keppo**, University of Michigan (969-60-152)

Special Session on Cryptography and Computational and Algorithmic Number Theory, III

3:00 PM – 4:50 PM UH 0047, University Hall (UH)

- Organizers: **Eric Bach**, University of Wisconsin-Madison
Jonathan Sorenson, Butler University
- 3:00PM *Ranks of quadratic twists of elliptic curves.*
▶ (145)
Alice Silverberg, Ohio State University (969-11-203)
- 3:30PM *Solving elliptic curve discrete logarithm problems using Weil descent.*
(146)
Michael J Jacobson, University of Manitoba, **Alfred J Menezes**, University of Waterloo, and **Andreas Stein***, University of Illinois at Urbana-Champaign (969-94-187)
- 4:00PM *Elliptic curve cryptography: the case of NIST P-224.*
▶ (147)
Daniel J. Bernstein, University of Illinois at Chicago (969-11-148)
- 4:30PM *Analysis of the GHS Weil Descent Attack on the ECDLP over Characteristic Two Finite Fields of Composite Degree.* Preliminary report.
(148)
Markus Maurer, University of Waterloo, **Alfred J Menezes**, Certicom Research & University of Waterloo, and **Edlyn E Teske***, University of Waterloo (969-11-115)

Special Session on Group Theory, III

3:00 PM – 4:50 PM BE 0394, Baker Systems Engineering (BE)

- Organizers: **Koichiro Harada**, Ohio State University
Surinder Sehgal, Ohio State University
Ronald Solomon, Ohio State University
- 3:00PM *Characterization of some s -adic simple groups.*
(149)
Preliminary report.
Ronald M Solomon, The OSU, and **Inna Korchagina***, Rutgers University (969-20-227)
- 3:30PM *Some non-split extensions of $O_7(3)$ and the Conway-Norton algebra for the Fischer group F_{24} .*
(150)
Masaaki Kitazume, Chiba University (969-20-171)

Special Session on L^2 Methods in Algebraic and Geometric Topology, III

3:00 PM – 4:45 PM BE 0184, Baker Systems Engineering (BE)

- Organizers: **Dan Burghilea**, Ohio State University
Michael Davis, Ohio State University
- 3:00PM *Coarse cohomology for foliations.*
(153)
James L. Heitsch, University of Illinois at Chicago (969-58-56)
- 4:00PM Discussion

Special Session on Multivariate Generating Functions and Automatic Computation, II

3:00 PM – 4:50 PM BE 0136, Baker Systems Engineering (BE)

- Organizer: **Robin Pemantle**, Ohio State University
- 3:00PM *Multivariate generating functions from tiling problems.*
(154)
James G Propp, University of Wisconsin (969-05-26)
- 3:30PM *Relax, but don't be too lazy.*
▶ (155)
Joris van der Hoeven, CNRS, Universite Paris-Sud, Orsay, France (969-40-78)
- 4:30PM *On the distribution of the number of Young tableaux for a uniformly random diagram.*
▶ (156)
Preliminary report.
Boris G Pittel, Department of Mathematics, The Ohio State University (969-05-100)

Special Session on Proof Theory and the Foundations of Mathematics, III

3:00 PM – 4:45 PM BE 0291, Baker Systems Engineering (BE)

- Organizer: **Timothy Carlson**, Ohio State University
- 3:00PM *Operational theories of sets.* Preliminary report.
(157)
Solomon Feferman, Stanford University (969-03-132)
- 4:00PM *Some aspects of linear logic.* Preliminary report.
(158)
Andreas R Blass, University of Michigan (969-03-120)

Special Session on Quantum Topology, III

3:00 PM – 4:50 PM BE 0285, Baker Systems Engineering (BE)

- Organizer: **Thomas Kerler**, Ohio State University
- 3:00PM *Detecting Virtual Knots.* Preliminary report.
(159)
Louis H Kauffman, University of Illinois at Chicago (969-57-170)
- 3:30PM *Tracelike functionals on the double of the Taft Hopf algebras.* Preliminary report.
(160)
David E Radford*, University of Illinois at Chicago, and **Sara Westreich**, Bar-Ilan University (969-16-76)
- 4:00PM *Subtleties of the integrals for Hopf-algebra objects in symmetric categories, and their reflection in topological invariants.*
(161)
Fernando J. O. Souza, Dept. of C. & O. - University of Waterloo (969-18-259)
- 4:30PM *A Space of Cyclohedra.* Preliminary report.
(162)
Satyan L Devadoss, Ohio State University (969-57-134)

Special Session on Rings and Modules, III

3:00 PM – 4:50 PM UH 0051, University Hall (UH)

Organizers: **S. K. Jain**, Ohio University
Tariq Rizvi, Ohio State University

- 3:00PM Γ -deviation and Localization of Lattices. (163) **Toma Albu**, University of Bucharest, and **Mark L Teply***, University of Wisconsin-Milwaukee (969-16-175)
- 3:30PM Embedding noetherian rings into artinian ones. (164) **Günter R Krause**, University of Manitoba (969-16-248)
- 4:00PM Generalized Triangular Matrix Rings and FI-Extending Property. (165) **Gary F Birkenmeier**, University of Louisiana at Lafayette, **Jaе Keol Park***, Busan National University, and **S. Tariq Rizvi**, Ohio State University at Lima (969-16-79)
- 4:30PM Perfect, semiperfect, and semiregular rings relative to an ideal. Preliminary report. (166) **Mohamed F Yousif**, Ohio State University at Lima, and **Yiqiang Zhou***, Memorial University of Newfoundland (969-16-236)

Special Session on Spectral Theory of Schrödinger Operators, III

3:00 PM – 4:50 PM BE 0130, Baker Systems Engineering (BE)

Organizers: **Boris Mityagin**, Ohio State University
Sergei Novikov, University of Maryland

- 3:00PM Reverse hypercontractivity and reverse log-Sobolev inequalities and all that. (167) **Stephen B Sontz**, CIMAT, Guanajuato, Mexico (969-81-178)
- 3:30PM On the low eigenvalues of some Schrödinger operators containing curvature. (168) **Evans M Harrell**, Georgia Institute of Technology (969-35-249)
- 4:00PM On the inverse scattering problem on branching graphs. (169) **Pavel B Kurasov**, Dept. of Mathematics, Stockholm Univ. (969-47-192)
- 4:30PM Laplacian and Schrödinger operator on regular metric trees. Preliminary report. (170) **Jan Lang**, Charles University, Prague (969-44-47)

Special Session on Fractals, II

3:00 PM – 4:50 PM BE 0192, Baker Systems Engineering (BE)

Organizer: **Gerald Edgar**, Ohio State University

- 3:00PM Exponential bases for Cantor measures. Preliminary report. (171) **Steen Pedersen**, Wright State University (969-42-12)
- 3:30PM Graph-directed iterated function systems with overlaps. (172) **Manav Das**, University of Louisville, and **Sze-Man Ngai***, Georgia Southern University (969-28-37)
- 4:00PM Packing measure and dimension of random fractals. Preliminary report. (173) **Artemi Berlinkov** and **Daniel R. Mauldin***, University of North Texas (969-60-77)
- 4:30PM Packing dimension in random recursive constructions. (174) **Artemi Berlinkov**, University of North Texas (969-28-99)

Special Session on Differential Geometry and Applications, III

3:00 PM – 4:55 PM BE 0188, Baker Systems Engineering (BE)

Organizers: **Andrzej Derdzinski**, Ohio State University
Fangyang Zheng, Ohio State University

- 3:00PM Rigidity of differentiable structures of line arrangements in CP^2 . (175) **Stephen S. Yau**, UIC (969-14-253)
- 3:30PM Classification of flat surfaces with constant Kaehler angle in complex Euclidean plane. (176) **Bang-Yen Chen**, Michigan State University (969-53-30)
- 4:00PM On the Existence of Focal Points near Closed Geodesics on Surfaces. (177) **Marlies Gerber**, Indiana University (969-53-128)
- 4:30PM Dirichlet Problem at Infinity for Open Manifolds with Big Ends. (178) **Jianguo Cao**, University of Notre Dame (969-53-24)

Session for Contributed Papers

3:00 PM – 5:10 PM BE 0198, Baker Systems Engineering (BE)

- 3:00PM Behavior of Norms of Powers of Fourier Series. (179) **George C. Stey**, The Ohio State University (969-42-221)
- 3:15PM Turning Capability of Normal operators. Preliminary report. (180) **Morteza Seddighin**, Indiana University-East (969-47-38)
- 3:30PM Complex Projections of Real Veronese Varieties. (181) **Adam Coffman**, Indiana University Purdue University Fort Wayne (969-32-64)
- 3:45PM Representing Hierarchies of Predicates. (182) **Edward R Griffor**, ARDG (Algorithm Research and Design Group) (969-03-11)
- 4:00PM An Algorithm for Proving the Goldbach's Conjecture! (183) **Vaidyanathan Jairaj**, Bangalore, India (969-11-25)
- 4:15PM Mathematics: More Art or Science? Preliminary report. (184) **G. Arthur Mihram***, Princeton, NJ, and **Danielle Mihram**, Univ. of Southern California (969-03-188)
- 4:30PM The relation between the elementary solutions of the general third order and second order linear differential equations. (185) **Ali A Salim**, Amman-city center (969-34-13)
- 4:45PM Lifting Idempotents and Projective Covers. (186) **Dinesh K Khurana**, Panjab University, Chandigarh (India) (969-16-255)
- 5:00PM Enumeration of permutations with forbidden templates. Preliminary report. (187) **Yuan-Sheng Zhang**, University of Pennsylvania (969-05-32)

Invited Address

5:10 PM – 6:00 PM EA 160, Math Annex (EA)

- (188) On the geometric Langlands conjecture. **Dennis Gaitsgory**, Harvard University

Reception (Sponsored by the Department of Mathematics)

6:00 PM – 8:00 PM MW 724, Mathematics Tower (MW)

Sunday, September 23

Special Session on Group Theory, IV

8:30 AM – 12:20 PM **BE 0394, Baker Systems Engineering (BE)**

Organizers: **Koichiro Harada**, Ohio State University
Surinder Sehgal, Ohio State University
Ronald Solomon, Ohio State University

- 8:30AM *On finite p-groups and their automorphisms.*
 (189) Preliminary report.
Jeffrey M Riedl, University of Akron (969-20-133)
- 9:00AM *Finite groups with trivial Frattini subgroup.*
 (190) **Luise-Charlotte Kappe***, SUNY at Binghamton, and
Joseph Kirtland, Marist College (969-20-49)
- 9:30AM *Pronormal and Subnormal Subgroups and*
 (191) *Permutability.*
James Clark Beidleman*, University of Kentucky,
 and **Hermann Heineken**, Universität of Würzburg
 (969-20-22)
- 10:00AM *Fitting Set Functors.* Preliminary report.
 (192) **Ben Brewster**, SUNY at Binghamton (969-20-83)
- 10:30AM *Commutators what's the problem?*
 (193) **Ted Hurley**, NUI, Galway (969-20-16)
- 11:00AM *Permutation groups, sharp characters and the*
 (194) *Burnside ring.* Preliminary report.
Kenneth W Johnson*, Penn State University,
 Abington College, and **Eirini Poimenidou**, New
 College USF (969-20-136)
- 11:30AM *Separability properties of certain tree products.*
 (195) Preliminary report.
G. Kim, Yeungnam University, Korea., and **Francis C**
Tang*, University of Waterloo, Canada. (969-20-97)
- NOON *The Zassenhaus Decomposition for the Orthogonal*
 (196) *Group: Properties and Applications.*
Alexander J Hahn, University of Notre Dame
 (969-20-45)

Special Session on Algebraic Cycles, Algebraic Geometry, IV

9:00 AM – 11:45 AM **UH 0151, University Hall (UH)**

Organizer: **Roy Joshua**, Ohio State University

9:00AM *Relative Chow-Künneth projectors for modular*
 (197) *varieties.* Preliminary report.
B. Brent Gordon*, University of Oklahoma, **Masaki**
Hanamura, Kyushu University, and **Jacob P Murre**,
 Leiden University (969-14-119)

10:00AM *Kato-Somekawa K-groups and higher Chow groups*
 (198) *of zero-cycles.*
Reza Akhtar, Miami University (969-14-196)

11:00AM *Goncharov relations in Bloch's higher Chow group*
 (199) *CH³(F, 5).*
Jianqiang Zhao, University of Pennsylvania
 (969-14-102)

Special Session on Commutative Algebra, IV

9:00 AM – 11:50 AM **UH 0147, University Hall (UH)**

Organizers: **Evan Houston**, University of North
 Carolina, Charlotte
Alan Loper, Ohio State University

9:00AM *Determinative sets of valuations for affine algebras.*
 (200) Preliminary report.
Bruce M Olberding, The University of Louisiana at
 Monroe (969-13-189)

9:30AM *Elasticity of $A + XI[X]$ domains.*
 (201) **Nathalie Gonzalez**, **Sebastien Pellerin*** and
Richard Robert, Universite d'Aix-Marseille 3
 (969-13-174)

10:00AM *Example of an interpolation domain.*
 (202) **David C Lantz**, Colgate University (969-13-52)

10:30AM *Strongly Two-Generated Ideals in Rings of*
 (203) *Integer-Valued Polynomials Determined by Finite*
Sets.

William W Smith*, University of North Carolina at
 Chapel Hill, **Scott T Chapman**, Trinity University,
 and **Alan Loper**, Ohio State University - Newark
 (969-13-33)

11:00AM *Ultraproducts of Commutative Rings.*
 (204)

Bruce Olberding, University of Louisiana at
 Monroe, and **Azime S Saydam***, University of
 Louisiana at monroe (969-13-113)

11:30AM *Separation of points by integer-valued polynomials.*
 (205) Preliminary report.

Sophie Frisch, TU Graz (Austria) (969-13-258)

Special Session on Cryptography and Computational and Algorithmic Number Theory, IV

9:00 AM – 11:50 AM **UH 0047, University Hall (UH)**

Organizers: **Eric Bach**, University of
 Wisconsin-Madison
Jonathan Sorenson, Butler University

9:00AM *Computations Related to Catalan's Conjecture.*
 (206) Preliminary report.
Jon Grantham* and **Ferrell Wheeler**, IDA/CCS
 (969-11-217)

9:30AM *Use of homomorphisms in cryptosystems.*
 (207) **Jee H Koh**, Indiana University (969-11-139)

10:00AM Break

10:30AM *Local Zeta functions, Trees and One-Way Functions.*
 (208) Preliminary report.

W. A. Zuniga-Galindo, Barry University, Department
 of Mathematics and Computer Science (969-11-46)

11:00AM *Is there a shortage of primes for cryptography?*
 (209) Preliminary report.

Samuel S Wagstaff, Purdue University (969-11-73)

11:30AM Discussion

Special Session on L^2 Methods in Algebraic and Geometric Topology, IV

9:00 AM – 11:45 AM **BE 0184, Baker Systems Engineering (BE)**

Organizers: **Dan Burghilea**, Ohio State University
Michael Davis, Ohio State University

9:00AM *L^2 -cohomology of buildings.*
 (210) **Jan Dymara***, The Ohio State University and
 Wroclaw University, and **Tadeusz Januszkiewicz**,
 Wroclaw University (969-20-112)

10:00AM *L^2 -homology of right-angled Coxeter groups.*
 (211) Preliminary report.

Michael W Davis, The Ohio State University, and
Okun L Boris*, University of Wisconsin, Milwaukee
 (969-57-207)

11:00AM *L^2 -torsion (a survey).*

Dan Burghilea, Ohio State University (969-57-254)

Special Session on Multivariate Generating Functions and Automatic Computation, III

9:00 AM – 10:50 AM **BE 0136, Baker Systems Engineering (BE)**

Organizer: **Robin Pemantle**, Ohio State University

- 9:00AM (213) *Rabin's Irreducibility Test for Polynomials over Finite Fields.*
Daniel Panario, Carleton University, **Boris Pittel**, Ohio State, **Bruce Richmond***, University of Waterloo, and **Alfredo Viola**, Universidad de la Republica (969-05-69)
- 9:30AM (214) *Linear recurrences with constant coefficients: the multivariate case.*
Mireille Bousquet-Melou, LaBRI, Universite Bordeaux 1 (969-39-62)
- 10:30AM (215) *Parameter varying Fourier-Laplace integrals: some "2 to 3 degenerate case" applications.*
Manuel E Lladser, Columbus, Ohio (969-05-86)

Special Session on Proof Theory and the Foundations of Mathematics, IV

9:00 AM – 12:20 PM **BE 0291, Baker Systems Engineering (BE)**

- Organizer: **Timothy Carlson**, Ohio State University
- 9:00AM (216) *Higher recursion in proof theory.*
Michael Möllerfeld, Institute for Mathematical Logic, WWU Münster (969-03-156)
- 10:00AM (217) *Muchnik Degrees of Π_1^0 Subsets of 2^ω .*
Stephen G. Simpson, Penn State University (969-03-183)
- 11:00AM (218) *Propositions as [bracket] types.* Preliminary report.
Steve Awodey, Carnegie Mellon University (969-03-105)
- NOON (219) *Proofs in Infinitesimal Analysis.*
Rick Sommer, Stanford University (969-03-257)

Special Session on Quantum Topology

9:00 AM – 11:50 AM **BE 0285, Baker Systems Engineering (BE)**

- Organizer: **Thomas Kerler**, Ohio State University
- 9:00AM (220) *The noncommutative A-ideal of a $(2p+1, 2)$ -torus knot determines its Jones polynomial.* Preliminary report.
Razvan Gelca* and **Jeremy Sain**, Texas Tech University (969-57-71)
- 9:30AM (221) *Links and 3-manifolds with the same quantum invariants.*
Yongwu Rong, George Washington University (969-57-125)
- 10:00AM (222) *Integrality and TQFT.* Preliminary report.
Patrick M Gilmer, Louisiana State University (969-57-160)
- 10:30AM Break
- 11:00AM (223) *Twisted Quandle Homology Theory and Construction of Cocycles.*
J. Scott Carter*, University of South Alabama, **Mohamed Elhamdadi** and **Masahico Saito**, University of South Florida (969-55-145)
- 11:30AM (224) *Extensions of quandles and cocycle knot invariants.*
J. Scott Carter, University of South Alabama, **Mohamed Elhamdadi**, **Marina A Nikiforou** and **Masahico Saito***, University of South Florida (969-57-144)

Special Session on Rings and Modules, IV

9:00 AM – 12:50 PM **UH 0051, University Hall (UH)**

- Organizers: **S. K. Jain**, Ohio University
Tariq Rizvi, Ohio State University
- 9:00AM (225) *Modules and Equations.* Preliminary report.
John Dauns, Tulane University (969-16-84)

- 9:30AM (226) *Uniform Injective Modules Over Valuation Rings.* Preliminary report.
Franco Guerriero*, Ohio University-Lancaster, and **Bruno J Mueller**, McMaster University (969-16-202)
- 10:00AM (227) *Semiprime Finitely Σ -CS Group Algebras.*
S. K. Jain, Ohio University, **Pramod Kanwar***, Ohio University-Zanesville, and **J. B. Srivastava**, Indian Institute of Technology (969-16-219)
- 10:30AM (228) *Modules with annihilator conditions.*
Nanqing Ding*, Nanjing University, Nanjing, China, **Mohamed F. Yousif**, The Ohio State University at Lima, and **Yiqiang Zhou**, Memorial University of Newfoundland (969-16-240)
- 11:00AM (229) *Graded almost noetherian algebras. Application to coalgebras.*
Constantin Nastasescu, University of Bucharest (969-16-251)
- 11:30AM (230) *On rings with ascending chain condition on right annihilators.*
Yasuyuki Hirano, Okayama University (969-16-206)
- NOON (231) *Operators on the big lattice of preradicals.*
Francisco F Raggi, Universidad Nacional Autonoma de México (969-16-252)
- 12:30PM (232) *On The Structure of Transitive Witt Rootsystems (Preliminary Report).* Preliminary report.
Mohammad Q. Hailat, Jordan University of Science and Technology (JUST) (969-17-98)

Special Session on Differential Geometry and Applications, IV

9:00 AM – 11:25 AM **BE 0188, Baker Systems Engineering (BE)**

- Organizers: **Andrzej Derdzinski**, Ohio State University
Fangyang Zheng, Ohio State University
- 9:00AM (233) *Harmonic functions on manifolds of nonnegative Ricci curvature.*
Harold G Donnelly, Purdue University (969-58-23)
- 9:30AM (234) *Regularity of holomorphic and harmonic functions.*
Peter Li, University of California, Irvine, and **Jiaping Wang***, University of Minnesota (969-58-61)
- 10:00AM (235) *Manifolds with quadratic curvature decay.*
John W Lott, University of Michigan (969-53-21)
- 10:30AM (236) *Compact Homogeneous Spaces with an Exponential Growth of Geodesics Joining Two Points.*
Gabriel P Paternain, Cambridge University, and **Leo T Butler***, Northwestern University (969-58-143)
- 11:00AM (237) *Stable ergodicity and frame flows.*
Keith Burns, Northwestern University (969-37-243)

Special Session on Coding Theory and Designs, IV

9:30 AM – 11:20 AM **UH 0090, University Hall (UH)**

- Organizers: **Tom Dowling**, Ohio State University
Dijen Ray-Chaudhuri
- 9:30AM (238) *The current status of the lambda-design conjecture.*
Ákos Seress, The Ohio State University, Columbus, Ohio (969-05-104)
- 10:00AM (239) *Designs with orthogonal resolutions.*
Esther R. Lamken, California Institute of Technology (969-05-197)
- 10:30AM (240) *Maximal arcs in projective three-spaces and double-error-correcting cyclic codes.*
Qing Xiang*, University of Delaware, and **Henk D. L. Hollmann**, Philips Research Labs (969-05-67)

- 11:00AM *Perfect Codes and Balanced Generalized Weighing*
▶ (241) *Matrices.*
Vladimir D Tonchev, Michigan Technological
University (969-05-10)

***Special Session on Stochastic Modeling in Financial
Mathematics, III***

9:30 AM – 11:20 AM **UH 0038, University Hall (UH)**

- Organizer: **Ronnie Sircar**, Princeton University
- 9:30AM Discussion
- 10:00AM *Option pricing with stochastic volatility.* Preliminary
(242) report.
Knut Solna, UCI (969-60-223)
- 10:30AM *A new algorithm for hedging large portfolios of*
▶ (243) *derivative instruments.* Preliminary report.
Stathis Tompaidis, McCombs School of Business,
MSIS Department, University of Texas at Austin
(969-90-58)
- 11:00AM Discussion

Susan J. Friedlander
Associate Secretary
Chicago, Illinois