III. GENERAL SCIENTIFIC EVENTS

At the *Second Canada-China Congress,* August 20–23, 2001, in Vancouver, Dr. Tom Brzustowski, President of the Natural Sciences and Engineering Research Council of Canada (NSERC) is shown with the Canadian and Chinese delegations.

Extra-Thematic Scientific Workshops

Due to its unique structure, PIMS is able to move quickly to produce and promote the latest advances in the mathematical sciences and involve PIMS' scientists in them. Rather than centering all its scientific activities around a few topics for an entire academic year, thus tying up resources and limiting participation, PIMS also runs shorter, more intensive programmes to emphasize rapidly developing areas. The flexibility of this structure improves communication between PIMS' members and the larger scientific community, resulting in better trained personnel and establishing vigourous dialogue between the mathematical sciences and the other disciplines.
This section describes the extra-thematic scientific activities of the institute. Each workshop has its own organizing committee and they are mostly held in the various PIMS sites. The selection and funding decisions are made by the Scientific Review Panel.

Northwest Dynamics Symposium, University of Victoria, May 6–8, 2000

Organisers: Chris Bose (Univ. of Victoria), Doug Lind (Univ. of Washington) and Ian Putnam (Univ. of Victoria).

This workshop covered a variety of topics, including ergodic theory, symbolic dynamics, topological dynamics, aperiodic tilings and K-theory.

Speakers:

Dan Rudolph (University of Maryland): *Entropy and Orbit Equivalence*

Robert Moody (University of Alberta): *Diffraction, Aperiodic Order, and Dynamical Systems*

Jeff Steif (Georgia Institute of Technology): *On the Existence and Non-existence of Finitary Codings for a Class of Random Fields*

Karl Petersen (University of North Carolina at Chapel Hill): *Maximal Measures for Factor Maps*

Bob Burton (Oregon State University): *Tilings with Intermediate Mixing Properties*

Beverly Diamond (Mathematics College of Charleston): *A Complete Invariant for the Topology of Substitution Tiling Spaces*

Nicholas Ormes (University of Texas, Austin): *A Homeomorphism Invariant for Pinwheel Tiling Spaces*

Mike Boyle (University of Maryland): *"Positive K-Theory" in Symbolic Dynamics*

Sujin Shin (University of Victoria): *About Compensation Functions for Factor Maps*

Danrun Huang (St. Cloud State University): *Flow Equivalence and Its Applications*

Chris Hoffman (University of Washington): *Which Endomorphisms Are Isomorphic to Bernoulli Endomorphism*

Genevieve Mortiss (University of New South Wales): *Some Approaches Towards a Non-Singular Entropy*

Manfred Einsiedler (University of East Anglia): *Generalized Dominoes and Fundamental Cocycles*

Michael Baake (Univeristy of Tubingen): *Symmetries and Reversing Symmetries of Toral Automorphisms*

Sam Lightwood (University of Victoria): *Morphisms for Square Filling Mixing Shifts of Finite Type*

Anthony Quas (University of Memphis): *Ergodic Averaging Sequences*

2[d] International Workshop on Scientific Computing & Applications, Kananaskis, Alberta, May 28 – June 1, 2000

Organisers: P. Minev and Y. Lin (U. Alberta)

The Second International Workshop on Scientific Computing and Applications continued the tradition of the highly successful workshop held at the City University of Honk Kong in December 1998. The workshop brought together mathematicians, scientists and engineers working in the field of scientific computing and its applications to solve scientific and industrially oriented problems. The workshop was sponsored by PIMS and the University of Alberta.

Main Speakers:

O. Axelsson (Catholic U. Nijmegen): *An Optimal Order Multilevel Preconditioner with Respect to Problem and discretization parameters*

R. Ewing (Texas A&M): *Modelling and Simulation of Multiphase Flow in Porous Media*

M. Fortin (U. Laval): *A Mesh Adaptation Procedure Based on a Hierarchical Error Estimator*

K. Y. Fung (Hong Kong Polytechnic U.): *Time-Domain Computation of Waves with Realistic Geometry and Impedance Boundary Conditions*

P. Gresho (Lawrence Livermore Laboratory): *On Rapid and Impulsive Transients for Viscous In- compressible Flow*

B. Guo (University of Manitoba): *Ective Parallel and Iterative Solvers for General-Setting h-p Finite Element Approximation*

R. Lazarov (Texas A&M): *Mortar Methods for Locally Conservative Schemes on Non-matching Grids*

B. Lee (NRC, Ottawa): *Fluid-Structure Interaction: Application in Nonlinear Aeroelasticity*

M. Salcudean (UBC): *Mathematical Modelling of Industrial Processes*

W. Sun (City University of HK): *The Collocation Method for PDE's*

T. Tang (Hong Kong Baptist U.): *Moving Mesh Methods for Partial Dirential Equations based on Harmonic Maps*

Zhong-Ci Shi (Academia Sinica): *A Class of High Accuracy Unconventional Finite Elements*

Meeting in Honour of Cindy Greenwood, UBC, June 2, 2000

There was a meeting on the afternoon of Friday, June 2, 2000 to commemorate the early retirement of Professor P. E. Greenwood.

Speakers:

Ildar Ibragimov (St Petersburg): *On a theorem of Stone concerning additive regression*

Jim Pitman (Berkeley): *Random trees and random partitions associated with Brownian excursions*

CECM/MITACS/PIMS Live Collaborative Mathematics on the Net, Simon Fraser University, June 19–20, 2000

This one and a half day workshop brought together people from academia and industry involved in mathematical computation, visualization, teaching and learning. This includes issues relating to communication, publication, and commerce using the Internet and related technologies. The half-day session on June 20 was dedicated to talks and tutorials on topics in Parallel Computing.

Speakers:

Lyn Bartram (Simon Fraser University): *Interactive and Collaborative?*

Konrad Polthier (Technische Universität, Berlin): *Mathematical Visualization and Online Experiments with JavaView*

Richard Smith (SFU): *CJC-Online: electronic scholarly publishing and research experience*

Ulrich Kortenkamp (Institut für Informatik, Freie Universität Berlin): *Visions of Geometry on the Net*

Neil Calkin (Clemson University): *An Open Source Model For Mathematical Content*

June Lester (Simon Fraser University): *What fascinates me about this online math stuff ...*

Loki Jörgenson (Simon Fraser University): *Components in Mathematics Learning: What is the Future for User Construction of Tools?*

Jason Ventrella (UBC): *Assembling the UBC vn Beowulf Cluster*

Martin Siegert (SFU): *Parallel Computing on a Cluster and a SMP Machine: A Comparison*

Jimmy Scott (Silicon Graphics Inc.): *Scalability of the Origin ccNUMA Architecture*

Victoria Computational Cosmology Conference, University of Victoria, August 21–25, 2000

Organisers: Arif Babul (University of Victoria), Julio Navarro (University of Victoria) and Hugh Couchman (McMaster University).

This highly successful 5-day conference known as VC3, brought together some of world's leading computational, theoretical and observational cosmologists — both established, pre-eminent figures as well as young rising stars — to discuss: (a) the latest progress in art and science of large-scale numerical simulations of galaxy systems; (b)to assess critically the insight into the formation and evolution of galaxy structures gained through these large numerical experiments; (c) to contrast the state-of-the-art numerical results against relevant, recent observational evidence; (d) and to chart the way forward on the computational, algorithmic and scientific fronts.

The conference, which attracted over 150 participants, also served as a backdrop for the first meeting of the governing council of the **Canadian Computational Cosmology Collaboration (C4)** to set the priorities for the first year of operations. **C4** draws together the leading numerical cosmologists from across Canada in an effort to determine a computational strategy for carrying numerical study of galaxy formation in unprecedented detail. This effort is undertaken in partnership with three leading numerical cosmology groups in the world: the N-body shop at the University of Washington led by T. Quinn, the University of Durham group led by C. S. Frenk and the Max Planck Institut for Astrophysik group led by S. D. M. White.

The conference week was capped by a public lecture — sponsored by the President of University of Victoria — titled *The Evolution of Structure in the Universe* given by Prof. Jeremiah P. Ostriker, the Provost and the Charles A. Young Professor of Astronomy at Princeton University. The public lecture drew a crowd in excess of 1000.

Invited speakers Rosemary Wyse (JHU) and Leo Blitz (Berkeley) discuss the morning's presentations over coffee with colleagues.

Prof. Jeremiah P. Ostriker (left) (Charles A. Young professor of astrophysics and provost of Princeton University) in intense discussions with Prof. George Efstathiou (University of Cambridge).

Speakers:

Rosemary Wyse (Johns Hopkins), **Sidney van den Bergh** (DAO/HIA/NRC), **Michael Rich** (UCLA), **Leo Blitz, Tim Robishaw, David Sherfesee, Josh Simon** (UC Berkeley), **Steven Majewski** (U. of Virginia), **James Taylor, Arif Babul** (U. of Victoria), **Martin Weinberg** (U. of Massachusetts at Amherst), **Ortwin Gerhard** (Basel), **Amina Helmi** (Leiden Observatory), **Simon White** (MPA Garching), **Volker Springel** (CfA), **Ben Moore** (Durham), **Lucio Mayer, Monica Colpi** (U. of Milan), **Fabio Governato** (Osservatorio Astronomico di Brera), **Ben Moore** (U. of Durham), **Thomas Quinn, Joachim Stadel, James Wadsley & George Lake** (U. of Washington), **Adrian Jenkins, Carlos Frenk, Shaun Cole** (Durham), **Joerg Colberg, Simon White, Naoki**

Yoshida (MPA Garching), **August Evrard** (U. of Michigan), **August Evrard** (U. of Michigan), **Ue-Li Pen** (CITA), **Richard Ellis** (Caltech), **Simon Driver** (St Andrews), **Ignacio Ferreras, Joseph Silk** (Oxford), **Harald Kuntschner, Roger L. Davies, Russell J. Smith, Matthew Colless** (Durham), **Elizabeth Barton** (DAO/HIA/NRC), **Carlos Frenk** (Durham), **Bernd von Kuhlmann et al** (Max-Planck-Institute of Astronomy Heidelberg), **M. Sawicki** (Caltech), **David Schade, D. Durand** (DAO/HIA/NRC), **Gabriela Mallen-Ornelas, Felipe Barrientos** (PUC, Santiago, Chile), **Luc Simard** (Steward Observatory), **Ray Carlberg and the CNOC2 and LCIR collaboration** (U. of Toronto), **Myungshin Im and DEEP team** (UCO/Lick Observatory), **Kelly Holley-Bockelmann, Douglas Richstone** (U. of Michigan), **Dan McIntosh** (Steward Observatory), **Hans-Walter Rix** (MPIA, Heidelberg), **Nelson Caldwell** (CfA & Arizona), **Tadayuki Kodama, Richard Bower** (U. of Durham), **Jennifer Lotz** (Johns Hopkins U.), **Crystal Martin** (Caltech), **Henry C. Ferguson** (STScI), **Michael Balogh, Richard Bower** (U. of Durham), **Julio Navarro** (U. of Victoria), **Simon Morris** (DAO, HIA, NRC), **Warrick Couch** (UNSW), **Daniel D. Kelson, P. van Dokkum, M. Franx, G. Illingworth** (Carnegie), **Kim-Vy H. Tran** (U. of California, Santa Cruz), **Garth D. Illingworth** (U. of California Observatories/Lick Observatory), **Sebastiano Ghigna** (Milano), **Ben Moore** (Durham), **Fabio Governato** (Milano), **Tom Quinn, Joachim Stadel, George Lake** (Washington), **Bodo Ziegler** (Goettingen), **Roger Davies, Richard Bower, Ian Smail, Michael Balogh** (Durham), **David Tytler** (UCSD), **Dick Bond** (CITA), **Len Cowie** (Hawaii), **Jeremiah Ostriker** (Princeton), **James Wadsley, Tom Quinn, Joachim Stadel** (U. of Washington), **Fabio Governato, Lucio Mayer** (Milano), **Simon White** (MPA Garching), **Neal Katz** (UMass) **Kentaro Nagamine, Renyue Cen & Jeremiah P. Ostriker** (Princeton U.), **Guinevere Kauffmann** (MPA Garching), **Frazer Pearce and the Virgo Consortium** (U. of Durham), **John S. Mulchaey** (Carnegie Observatories), **Volker Springel** (Harvard-Smithsonian Center for Astrophsyics), **Jan Vrtilek, Larry David, Laura Grego, D. Jerius, C. Jones, W. Forman, R. Donnelly** (Center for Astrophysics), **Trevor Ponman** (U. of Birmingham), **Gary Mamon**, (Institut d'Astrophysique de Paris), **S. Dos Santos** (U. of Leicester), **Anatoly Klypin** (NMSU), **Yehuda Hoffman** (Jerusalem), **Antonaldo Diaferio** (Universita' di Torino), **Ravi Sheth** (Fermilab), **Timothy M. Heckman** (Johns Hopkins U.), **Liese van Zee** (Herzberg Institute of Astrophysics), **Crystal Martin** (Caltech), **Susan Ridgway and Timothy Heckman** (Johns Hopkins U.), **Daniela Calzetti** (STScI), **M. Lehnert** (MPE Garching), **George Efstathiou** (Cambridge), **Matthias Steinmetz** (Arizona), **Paul Shapiro** (U. of Texas), **Alejandro Raga** (Instituto de Astronomia, UNAM, Mexico), **Daniel Pfenniger** (Geneva Observatory), **Mauro Giavalisco** (STScI), **Alice Shapley, C. Steidel, K. Adelberger** (Caltech), **Max Pettini** (Institute of Astronomy, Cambridge), **Marc Dickinson** (Space Telescope Science Institute), **Henry C. Ferguson** (Space Telescope Science Institute), **Art Wolfe** (UCSD), **Michael Rauch** (Observatories of the Carnegie Institution of Washington), **Renyue Cen** (Princeton U. Observatory), **Simon Morris** (DAO/HIA/NRC), **Buell Jannuzi** (NOAO), **Romeel Dave'** (Princeton Univ Observatory), **Lars Hernquist** (Harvard Center for Astrophysics), **Neal Katz** (Univ. of Massachusetts), **David Weinberg** (Ohio State U.), **Greg Bryan** (MIT), **Joop Schaye** (Institute of Astronomy, Cambridge), **Tom Theuns, Houjun Mo** (Institute of Astronomy, Cambridge and Max-Planck Institut fur Astrophysik), **Joop Schaye** (Institute of Astronomy, Cambridge), **Saleem Zaroubi** (Max-Planck Institut fur Astrophysik), **Todd M. Tripp, Edward B. Jenkins** (Princeton U. Observatory), **Blair D. Savage** (U. of Wisconsin), **Alain Smette, Sarah. R. Heap, Gerard M. Williger** (NASA/GSFC), **Ed B. Jenkins, Todd Tripp** (Princeton U. Observatory) and **David Weinberg** (Ohio State U.).

Biophysics and Biochemistry of Motor Proteins, Banff, AB August 27 – September 1, 2000

Organiser: Jack Tuszynski (U. Alberta)

Invited Speakers:

D. Astumian (U. of Chicago): *Reversible and Intrinsically Irreversible Molecular Motors*

S. Block (Princeton): *Force Production by Single Kinesin Motors*

T. Duke (Cambridge, UK): *Cooperativity in Sensory and Motor Systems*

Y. Engelborghs (Katholieke Universiteit Leuven, Belgium):

H. Flyvbjerg (RisøNational Laboratory, Denma): *Mechanical Stability of Microtubules*

E. Frey (Harvard U.): *Collective Phenomena in Microtubule Kinesin Interaction*

R. Goldman (Northwestern U.): *The Motile Properties of Intermediate Filaments*

L. S. Goldstein (UC San Diego): *Transport Pathways, Receptors, and Human Diseases*

R. S. Hodges (U. of Alberta): *Analysis of Kinesin and Kinesin-Like Neck Regions: Implications for Motor Structure and Function*

J. Howard (U. of Washington): *Force Generation by Kinesin and its Regulation*

F. Jülicher (Curie Institute, France): *Theoretical Approaches to Active Biological Systems: Bundle Contractions, Axonemal Beating and Sound Detection*

T. R. Kelly (Boston College): *A Rationally Designed Prototype of a Molecular Motor*

F. Kozielski (Institute for Structural Biology, France): *Structural Links to Kinesin Directionality and Movement*

A. Maniotis (U. of Iowa): *Gel Contraction and Spheroid Generation via Deregulation of Actomyosin Interactions Consistently Predicts Metastatic and Invasive Potential of Tumor Cells in a Variety of Aggressive Cancers*

A. Mogilner (UC Davis): *Control of Actin Dynamics and Force Generation at the Leading Edge of Migrating Cells: Quantitative Model*

C. D. Montemagno (Cornell U.): *Biomolecular Motors: Engines for Nanofabricated Systems*

D. Odde (Michigan Technical U.): *Chemical and Mechanical Interactions in Microtubules*

G. Oster (Berkeley): *The Mechanochemistry of ATP Synthase*

D. Sackett (National Institute of Health): *Kinesin-Mimetic Proteins: HIV-1 Rev*

E. Unger (IMB, Jena, Germany): *Regulation of Kinesin-mediated Motility and Co-operative Unidirectional Force Orientation*

R. Vallée (U. of Massachusetts): *Mutations in the the LIS-1 Gene Dramatically Alter Brain Development Through Defects in Mitotic Cytoplasmic Dynein Function*

T. Vicsek (Eötvös U., Hungary): *Biopolymer Dynamics in Silico: Applications to Motility Assays and DNA Transport in Confined Geometries*

T. Yanagida (Osaka, Japan): *Sub-steps Within the Step per ATPase Cycle of Myosin and Kinesin*

CMS Winter 2000 Meeting, Vancouver, BC December 10–12, 2000

PIMS supported two additional sessions at this CMS meeting.

Session on Financial Mathematics

Organiser: U. Haussmann (UBC)

Speakers:

Daniel Dufresne (University of Montreal): *Pricing Asian options*

Michael Taksar (State University of New York): *Optimal financing of a corporation subjuct to random returns*

Fernando Zapatero (University of Southern California): *Executive stock options with effort disutility and choice of volatility*

Jerome Detemple (U. Montreal)

Ulrich Haussmann (University of British Columbia): *Optimal portfolio selection based on observed prices*

Session on PDE

Organisers: R. Froese and N. Ghoussoub (UBC)

Speakers:

Stephen Anco (Brock): *Well-posedness of the Caunchy problem for a novel generalization of Yan-Mills*

Changfeng Gui (UBC): *On some mathematical problems related to phase transition*

Dirk Hundertmark (Caltech): *An optimal Lp bound on the Krein spectral shift function*

Reinhard Illner (University of Victoria): *Existence and use of kinetic equilibria in traffic dynamics, diffusive granular flow and rarefied gases*

Alex Iosevich (Columbia-Missouri)

Peter Perry (University of Kentucky): *Zeta functions and determinants on hyperbolic manifolds of infinite volume*

Daniel Pollack (University of Washington): *Gluing and wormholes for the Einstein constraint equations*

Randall Pyke (Ryerson Ploytechnic University): *Characterization of bound states for nonlinear wave and Schrodinger equations*

Hart Smith (University of Washinton): *Fundamental solutions for low regularity wave equations*

Catherine Sulem (University of Toronto): *The water-wave problem and its long-wave and modulational limits*

Gunther Uhlmann (University of Washington): *Determining riemannian manifolds from the Dirichlet-to-Neumann map*

Man-Wah Wong (York University): *The special Hermite semigroup*

Design Theory: Resolvability and Parallelisms, PIMS-SFU, May 16–18, 2001

Organisers: Brett Stevens and Luis Goddyn (SFU)

Parallel classes and resolvability are two powerful substructures in Combinatorial Design theory. Full and partial Parallel classes are necessary for Wilson's Fundamental construction.

Recent generalizations of traditional resolvability are an exciting new area of study and application. There have been two recent generalizations of resolvability to Pairwise Balanced Designs, RRPs where every resolution class is made of of blocks of a fixed size and CURDs where every resolution class is isomorphic as a spanning subgraph of the complete graph. Resolvable packings and partial resolutions have been shown to be powerfully applicable to synchronous unipolar multi-user communication systems. These exciting recent developments prompted this mini workshop on the subject.

Speakers:

Charles Colbourn (University of Vermont): *Doubly resolvable Steiner triple systems*

Mark Chateaunef (University of Waterloo): *Resolving to avoid parallelisms*

Izabella Adamczak (Michigan Technical University): *On the hole-size bound for incomplete block designs*

Myra Cohen (University of Aukland, NZ): *Cluttered Orderings for the Complete Graph*

Peter Danzinger (Ryerson Polytechnic University): *Class-Uniformly Resolvable Designs*

Peter Dukes (Caltech): *New Lower Bounds on the Maximum Number of Mutually Orthogonal Steiner Triple Systems*

Eric Mendelsohn (University of Toronto): *Resolvability and Configurations*

Rolf Rees (Memorial University): *Direct product constructions for resolvable group divisible designs*

Don Kreher (Michigan Technical University): *On PBIBD Designs Based on Triangular Schemes*

Alan Ling (Michigan Technical University)

John Stardom (Simon Fraser University)

Alex Rosa (McMaster University): *Upper Chromatic Index and Specialized Block Colourings of Steiner Triple Systems*

Ninth Canadian Conference on General Relativity and Relativistic Astrophysics, University of Alberta, May 24–26, 2001

Organisers: C. P. Burgess (McGill), J. Gegenberg (New Brunswick), D. Hobill (Calgary), H. P. Künzle (Alberta) and R. G. McLenaghan (Waterloo).

This was the ninth in a series of meetings, held every two years, designed to bring together researchers in gravitation, relativity, astrophysics, and related fields and to enhance the interaction between the Canadian and wider international research communities in these areas. There were three mornings of plenary talks, two afternoons of contributed talks in parallel sessions and poster presentations.

The conference was held in conjunction with Black Holes III, in Kananaskis, Alberta, in the Canadian Rocky Mountains, May 20–22.

Invited Speakers:

John Baez (University of California at Riverside): *New developments in canonical quantum gravity*

Dick Bond (CITA): *Cosmic Parameters from the CMB*

Viqar Hussain (University of New Brunswick): *Dualities and Wilson loops*

Amanda W Peet (University of Toronto): *Recent developments in string theory and applications to black holes*

Eric Poisson (University of Guelph): *Gravitational radiation reaction in strong fields*

Kristin Schleich (University of British Columbia): *Topological censorship*

Saul Teukolsky (Cornell University): *Numerical simulations of black holes*

Kip S Thorne (California Institute of Technology): *Gravitational waves: A status report*

Virginia Trimble (University of California at Irvine): *Looking into the potential wells: Observations of compact objects*

S-T Yau (Harvard University): *Existence of black holes*

CAIMS Annual Meeting, University of Victoria, June 7–9, 2001

PIMS sponsored two additional sessions at the 2001 Annual Meeting of the Canadian Applied and Industrial Mathematics Society.

Applied Dynamical Systems

Organizer: Florin Diacu (Univ. of Victoria)

Speakers:

William Langford (University of Guelph): *Normal Form Analysis of Nayfeh's Abnormal Resonance*

Jerry Marsden (Caltech): *Dynamical systems, celestial mechanics and space mission design*

James Montaldi (INLN (Nice, Fr) & UMIST (UK)): *Persistence of Relative Equilibria*

Ernesto Perez (University of Pemambuco): *Central Configurations for Charged Problems*

Hildeberto Cabral (Universidade Federal de Pemambuco): *Periodic solutions of perturbations of the Kepler problem*

Carmen Chicone (University of Missouri): *What are the calssical equations of motion with radiation reaction taken into account?*

Daniel Offin (Queens University): *Stability of periodic solutions and the variational principle*

Christina Stoica (University of Victoria): *Classical Scattering and Block Regularization*

Mathematical Biology

Organizer: Pauline van den Driessche (Univ. of Victoria)

Speakers:

Leah Keshet (University of British Columbia): *Modelling cell and chemical interactions in Alzheimer's Disease*

Michael Li (University of Alberta): *Mathematical Analysis of the Global Dynamics of a Model for HTLV-1 Infection and ATL Progression*

Mark Lewis (University of Utah): *How predation can slow, stop or reverse a prey invasion*

Mark Kot (University of Washington): *Do Invading Organisms do the Wave?*

Hal Smith (Arizona State University): *Colonization resistance in the gut and microbial surface colonization of bio-reactors*

Gail Wolkowicz (McMaster University): *Mathematical Modeling of Self Cycling Fermentation*

Mary Lou Zeeman (The University of Texas at San Antonio): *Modeling the Human Menstrual Cycle*

William Langford (University of Guelph): *Normal Form Analysis of Nayfeh's Abnormal Resonance*

Sally Blower (UCLA): *Live attenuated HIV vaccines: predicting the trade-off between efficacy & safetyn*

Shigui Ruan (Dalhousie University): *Codimension Two Bifurcations in Ecological and Epidemiological Models*

Designs, Codes, Cryptography and Graph Theory, University of Lethbridge, July 9–14, 2001

Organisers: Wolf Holzmann, Hadi Kharaghani and Jim Liu (University of Lethbridge).

This was the second workshop on Designs, Codes, Cryptography and Graph Theory at the University of Lethbridge. Instructional lectures were held each morning, with talks on individual papers in the afternoons.

Brian Alspach (University of Regina) gave a series of 3 instructional lectures on vertex-transitive graphs. **Charles Colbourn** (Arizona State University) gave a series of 3 instructional lectures on applications of combinatorial designs. **Chris Rodger** (Auburn University) gave a series of 3 instructional lectures on coding theory. **Doug Stinson** (University of Waterloo) gave a series of 3 instructional lectures on the Discrete Logarithm Problem as applied to cryptography. **Vladimir Tonchev** (Michigan Technical University) gave an instructional lecture on combinatorial designs as applied to digital communication. All of the instructional lectures were well-balanced, entertaining and informative, pitched at a level appropriate to non-experts with some discrete mathematical background, yet describing some of the cutting edge of research in these fields. Workshop organisers were extremely fortunate in attracting mathematicians of such eminence in their fields who are also talented expositors of their work.

There were 44 registered participants in the workshop, from 8 countries around the world: Canada, the United States, the United Kingdom, Australia, Italy, Spain, Korea and Iran. Participants included employees of SaskTel and the Department of National Defense, in addition to the academic registrants. Communication and a collaborative atmosphere were fostered by a session on open problems, as well as much informal discussion during the times available for social activities during the week.

The workshop was an enjoyable, informative and invigorating experience for participants, who left with their understanding of designs, codes, cryptography and graph theory having been both broadened and enriched.

Additional Invited Speakers:

M. Buratti (Università di Perugia, Italy): *Selected Topics on Sharply-Vertex-Transitive Designs*

R. Craigen (U. of Manitoba): *Complementary Pairs of Sequences*

G. Hahn (U. of Montreal): *Absorbing Sets in Coloured Tournaments*

S. Hedayat (U. of Illinois at Chicago): *Adding More Runs to Saturated D-Optimal Resolution III Designs*

Y. Ionin (Central Michigan U.): *Decomposable Symmetric Designs*

G. B. Khosrovshahi (IPM and Tehran U., Iran): *Some Results on the Existence of Large Sets of t-Designs*

T. Kloks (Royal Holloway U. of London): *Fixed Parameter Complexity*

D. Kreher (Michigan Technological U.): *A Hole-Size Bound for Incomplete t-Wise Balanced Designs*

A. Ling (Michigan Technological U.): *The Existence of Kirkman Squares — Doubly Resolvable* $(v; 3; 1)$*-BIBDs*

K. Murty (U. of Toronto): *The Number of Words in Certain Non-linear Codes*

R. Rees (Memorial U. of Newfoundland): *On Holes in t-Wise Balanced Designs*

C. Rodger (Auburn U.): *A Very Basic Intoduction to Error Correcting Codes, The Graph Theoretical Approach to Convolutional Codes, and Encoding on Compact Discs*

R. Safavi-Naini (U. of Wollongong, Australia): *Error and Deletion Correcting c-Secure Codes*

P. Shiue (U. of Nevada Las Vegas): *On the Number of Primitive Polynomials over Finite Fields*

D. Stinson (U. of Waterloo): *The Discrete Logarithm Problem: Theory and Cryptographic Applications*

V. Tonchev (Michigan Technical U.): *Perfect Codes and Balanced Generalized Weighing Matrices, and Combinatorial Designs and Digital Communication*

R. Wei (Lakehead U.): *On Cover-Free Families*

H. Williams (U. of Manitoba): *Applications of a Numerical Sieving Device*

Group photo from the Designs, Codes, Cryptography and Graph Theory workshop.

International Conference on SCIentific Computation And Differential Equations, Coast Plaza Hotel, Vancouver, July 29 – August 3, 2001

Organisers: U. Ascher (chair, UBC), G. Bock (Heidelberg), K. Burrage (Brisbane), A. Iserles (Cambridge), L. Petzold (Santa Barbara) and R. Russell (SFU)

This meeting was concerned with scientific computing involving the numerical solution of differential equations. Numerical techniques in applications were emphasized. These included optimization and optimal control, chemical and mechanical engineering, stochastic differential equations, level-set methods, molecular dynamics, computer graphics, robotics.

The meeting is part of the SCICADE series, the last of which was held in Fraser Island (Australia), August 9–13, 1999. The next meeting is planned for June 30–July 4, 2003, in Trondheim, Norway.

Plenary Speakers:

Lorenz Biegler (Carnegie Mellon University): *Dynamic Chemical Process Optimization*

Kevin Burrage (University of Queensland): *An overview of numerical methods for stochastic ordinary differential equations*

Stephen Campbell (North Carolina State University): *Optimization and Differential Equations*

Luca Dieci (School of Mathematics, Georgia Tech): *Some computational problems in dynamical systems*

Leslie Greengard (Courant Institute, New York University): *Integral equations and computational engineering*

Thomas Hou (Caltech): *Numerical Solutions to Free Boundary Problems*

Christian Lubich (Universitaet Tuebingen): *Fast convolution for non-reflecting boundary conditions*

Reinout Quispel (La Trobe University, Melbourne): *Geometric Integration of ODEs*

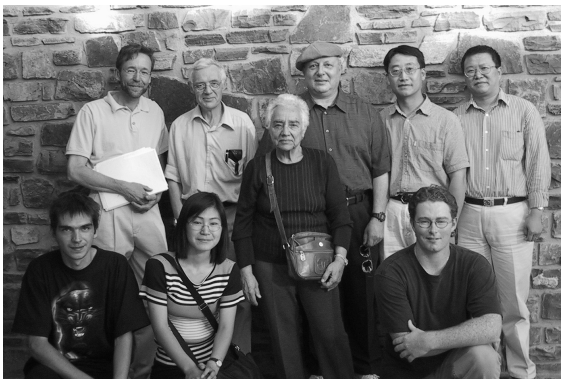
Sebastian Reich (Department of Mathematics, Imperial College, London): *Conservative Methods for Wave and Fluid Dynamics*

Gustaf Soderlind (Center for Mathematical Sciences, Lund University): *Digital Filters in Adaptive Time-Stepping*

Demetri Terzopoulos (Universities of New York and Toronto): *Differential Equations in Vision, Graphics and Design*

Aspects of Symmetry on the occasion of the 60th birthday of Robert Moody, Banff, AB, August 26–29, 2001

Organisers: Michael Baake (Universität Greifswald) and Arturo Pianzola (U. Alberta)



Maria's Group (all mathematical children and grandchildren of Maria). Top (left-right): A. Pianzola, R. Moody (U. Alberta), M. Wonenberger (Spain), S. Berman (U. Saskatchewan), K. Liu (UBC), Y. Gao (York). Bottom (left-right): N Strungaru, J.-Y. Lee, S Sullivan (U. Alberta).

Speakers:

James Arthur (University of Toronto)
Georgia Benkart (University of Wisconsin)
Stephen Berman (University of Saskatchewan)
H.S.M. (Donald) Coxeter (University of Toronto)
Terry Gannon (University of Alberta)
Victor Kac (MIT)
Jeffrey Lagarias (AT&T Labs-Research)
Ian Macdonald (Oxfordshire)
Kumar Murty (University of Toronto)
Jiri Patera (CRM)
Ian Putnam (University of Victoria)
Peter Slodowy (Universitat Hamburg)
Louis Solomon (University of Wisconsin)
Boris Solomyak (University of Washington)
Efim Zelmanov (Yale University)
Andrei Zelevinsky (Northeastern University)

A Glimpse at 2002

Round Group Rings seminar, Jasper, BC, February 18–21, 2002

Workshop on the role of statistical modeling in the 21st century, SFU, May 4–6, 2002

International conference on robust statistics, UBC, May 12–18, 2002

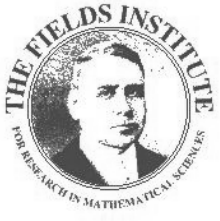
3rd Pacific Northwest PDE conference and workshop in honor of John Cannon for his 65th birthday, Washington State Univ., May 15–18, 2002

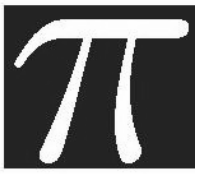
MSRI Summer Graduate Camp on Computational Number Theory, Hosted by PIMS at SFU, June, 2002

Workshop on Filtering Theory and Applications, University of Alberta, July 20–26, 2002

Frontiers in Mathematical Physics: Workshop on Brane Worlds and Supersymmetry UBC, Vancouver July 22 – August 02, 2002 co-sponsored by PIMS, APCTP and the Perimeter Institute

Symposium on Aperiodic order, dynamical systems, operator algebras and toplogy, University of Victoria, August 4–8, 2002



National Programme Committee

In 1999 the three Canadian Institutes in the Mathematical Sciences, CRM, Fields and PIMS, initiated a new programme for the support of joint activities in the mathematical sciences. This programme is administered by a National Programme Committee, which makes recommendations to the Directors of the three institutes. The mandate includes:

- Allocating funds provided by the three institutes to support conferences and workshops in the mathematical sciences across Canada. These are primarily activities that fall outside of the main purview of the three institutes, or that would benefit from joint institute funding.
- Allocating funds for the support of activities that are held at the meetings of the three Canadian mathematical science societies: Canadian Mathematical Society (CMS), Canadian Applied and Industrial Mathematical Society (CAMS), Statistical Society of Canada (SSC).
- Assist the National Societies in supporting graduate students to attend these scientific meetings and coordinating annually the organization of three Institute Sessions to be held at the meetings of the Canadian Mathematical Society.
- Coordinating international programs and other ventures where it is advantageous for the three Institutes to act as a whole.

The six member committee consists of the Deputy Director and one member of the scientific advisory panel at each institute.

A call for proposals is made annually with submitted proposals considered semi-annually (September 15 and March 15). Primary administrative responsibility for the program rotates between the three Institutes on an annual basis. Submissions are made to the Deputy Director of the institute administering the program in that year. Last year, the Committee approved the following slate of scientific activities:

Activities 2000/2001:

Western Canada Linear Algebra Meeting
University of Manitoba, May 26 – 27, 2000
Contact: P. ven den Driessche (UVic)

Mathematical Year 2000 meeting
Universite Laval, May 5–7, 2000
Contact: Frederic Gourdeau

Special Functions 2000
Arizona State University, May 29 – June 9
Contact: L. Vinet (McGill)

Statistical Society of Canada, 2000 Conference
Ottawa, June 4–7, 2000
Contact: D. Murdoch (UWO)

Math 2000 Meeting
McMaster University, June 10–13, 2000
Contact: Ian Hambleton

Approximation, Complex Analysis and Potential Theory
Université de Montréal, July 3–7, 2000
Contact: Aubert Daigneault

First Prairie Industrial Problem Solving Workshop

Brandon, Manitoba, August 7–11, 2000
Contact: L. Batten, (U. Manitoba)

CITA/ICAT Meeting
Toronto, Ontario, August 26–30, 2000
Contact: J. Richard Bond

12th Canadian Conference on Computational Geometry
Fredericton, New Brunswick, August 2000
Contact: David Bremner

CMS Winter 2000 Meeting
Vancouver, December 10–12, 2000
Contact: Dale Rolfsen (UBC)

Novel Approaches to Hard Discrete Optimization
University of Waterloo, April 26–28, 2001
Contact: Henry Wolkowicz (U. of Waterloo)

Canadian Annual Symposium on Operator Algebras,
MSRI, Berkeley, California, April 26 – May 2, 2001
Contact: George Elliott (UT)

Black Hole, III Conference
Kananaskis, Alberta May 19-23, 2001
Organizer: A. Frolov (U. of Alberta)

Groups, Rings Lie and Hopf Algebras
St. John's, Newfoundland, May 8 – June 1, 2001
Contact: Yuri Bahturin (AARMS/Memorial)

PIMS Sessions at the CMS Summer 2001 Meeting
University of Saskatchewan, June 2–4, 2001
Contact: Keith Taylor

Joint meeting of SSC, IMS and WNAR,
SFU, June 10–14, 2001
Contact: Mary Lesperance (U. of Victoria)

International Workshop on Dynamical Systems & their Applications in Biology
Cape Breton, Nova Scotia, August 2–6, 2001
Contact: Shigui Ruan (AARMS/Dalhousie)

13th Canadian Conference on Computational Geometry
University of Waterloo, August 13–15, 2001
Contact: Therese Biedl (U. of Waterloo)

Second Gilles Fournier Memorial Conference
University of Sherbrooke, August 13–15, 2001
Contact: Tomasz Kaczynski (U. of Sherbrooke)

Second Workshop on the Conley Index and Related Topics
University of Sherbrooke, August 15–18, 2001
Contact: Tomasz Kaczynski (U. of Sherbrooke)

Aspects of Symmetry on the occasion of the 60th birthday of Robert Moody
Banff, Alberta, August 26–29, 2001
Contact: Arturo Pianzola, Alberta

Modelling and Scientific Computation
Fredericton, New Brunswick, Sept. 29–30, 2001
Contact: Viqar Husain (AARMS/UNB)

CMS Winter 2001 Meeting
York University, December 8–10, 2001
Contact: Tom Salisbury (York)

International Initiatives

Second Canada-China Mathematics Congress, UBC, August 20–23, 2001

This initiative builds on the success of the first Congress held at Tsinghua University, Beijing, in August 1999, and is aimed at developing further the collaborative research effort between the two countries. It is sponsored by the 3×3 Canada-China initiative, Centre de Recherches Mathématiques, Fields Institute for the Mathematical Sciences, Pacific Institute for the Mathematical Sciences and MITACS Network of Centres of Excellence.

Organizing Committee:

Nassif Ghoussoub (National Math. Coordinator for 3x3 Canada-China Initiative), Dale Rolfsen (PIMS UBC-Site Director), JingYi Chen (UBC), Xiao Jiang Tan (Peking University), Lizhong Peng (Peking University), Dayong Cai (Tsing Hua University), XingWei Zhou (Nankai University), JiaXing Hong (Fudan University).

Officers of the Chinese Delegation

- **Zhi Xing Hou** (President of Nankai University, Director of Mathematical Centre of Chinese Education Ministry)
- **Wang Jie** (Vice director, Chinese Nature Scientific Foundation)
- **Zhiming Ma** (President, Mathematical Society of China)
- **L.Z. Peng** (Secretary, the Mathematical Society of China)
- **K.C. Chang** (Director, Mathematical Centre of Chinese Education Ministry)

Officers of the Canadian Delegation

- **Tom Brzustowski** (President of NSERC)
- **Barry McBride** (Vice-President Academic, UBC)
- **Nassif Ghoussoub** (PIMS Director and National Math. Coordinator for 3x3 Canada-China Initiative)
- **Arvind Gupta** (MITACS program leader)
- **Ken Davidson** (Director, Fields Institute)
- **Jacques Hurtubise** (Director, CRM)

From left: Robert Moody, Arvind Gupta, Tom Brzustowski, Nassif Ghoussoub, Mark Lewis, Jacques Hurtubise and Hugh Morris at the Canada-China banquet at UBC.

Plenary Speakers:

- **Robert Moody** (U. of Alberta), *The World of Aperiodic Order*
- **Catherine Sulem** (Toronto): *The Nonlinear Schrödinger equation: Self-focusing and Wave Collapse*
- **Zhiming Ma** (Academic Sinica), *Some New Results/Directions in Probability Theory*
- **Mark Lewis** (Alberta): *Realistic models for biological invasion*
- **Jie Xiao** (Tsinghua), *Hall Algebras and Quantum Groups*
- **Yiming Long** (Director of the School of Mathematical Sciences, Nankai U.), *Iteration theory of Maslov-type index with applications to nonlinear Hamiltonian systems*
- **Xiaoman Chen** (Fudan), *On the Structure, K-theory of Roe Algebras*
- **Weiyue Ding** (Director of the Institute of Mathematics, Peking U.), *On the Schrodinger Flow*
- **Gordon Slade** (UBC): *Scaling limits and super-Brownian motion*
- **Ian Putnam** (Victoria): *Operator algebras and hyperbolic dynamical systems*
- **Gang Tian** (MIT): *Kahler-Einstein metrics and geometric stability*
- **Henri Darmon** (McGill): *Periods of modular forms and rational points on elliptic curves*

Session Speakers

I. Algebra and Number Theory:

- **Qingchun Tian** (Peking): *Iwasawa Theory for p-adic Representation*
- **Xingui Fang** (Tsinghua): *On 1-arc Regular Graphs*
- **Weisheng Qiu** (Peking): *Completely Settling of the Multiplier Conjecture for the case of* $n = 3p^3$
- **Yonghui Wang** (Capital Normal): *Some Results on Analytic Number Theory*
- **Jim Carrell** (UBC): *Cohomology and vector fields*
- **Kai Behrend** (UBC): *Equivariant vector fields and the cohomology of stable map spaces*
- **Terry Gannon** (Alberta): *The algebraic combinatorics of rational conformal field theory,*
- **Zinovy Reichstein** (UBC): *Trace forms of Galois field extension in the presence of roots of unity*
- **Jim Bryan** (UBC): *Curves in Calabi-Yau 3-folds and integrality in Gromov-Witten theory*
- **Tony Geramita** (Queens): *Tensor Rank, Secant Varieties of Segre Varieties and Schemes of Fat Points in Multiprojective Spaces*
- **Henri Darmon** (McGill): *Periods of modular forms and rational points on elliptic curves*

II. Mathematical Physics and PDE:

- **Yunbo Zeng** (Tsinghua): *Integral-type Darboux transformations for soliton hierarchy with self-consistent sources*
- **Peidong Liu** (Peking): *Entropy and Iyapunov Exponents for Stationary Random Maps*
- **Chengming Bai** (Nankai): *The Happer's Puzzle Degeneracies and Yangian*
- **Songmu Zheng** (Fudan): *Maximal attractor for some non-linear PDEs*
- **Jiayu Li** (Fudan): *Geometric Analysis*
- **Li Ma** (Tsinghua): *Some new results about mean field equations*
- **Shuxiang Huang** (Shang Dong): *Global Solutions and Asymptotic Behaviour for Reaction-diffusion Equations*
- **Dmitry Jakobson** (McGill): *Some new and old results on eigenfunctions*
- **Jia Quan Liu** (Peking): *Solutions for Quasilinear Elliptic Equations*
- **Shoulin Zhou** (Peking): *On a Singular Equation*
- **Shenghong Li** (Zhejiang): *Second Boundary Problem for Parabolic Equations with Gradient Obstacle*
- **Nassif Ghoussoub** (PIMS and UBC): *On De Giorgi's conjecture in higher dimensions*
- **S. Gustafson** (UBC):
- **Peter Greiner** (Toronto): *Subelliptic PDEs and Subriemannian Geometry*
- **Gordon Semenoff** (UBC): *Boundary states for background independent string field theory*
- **Izabella Łaba** (UBC): *Spectral Measure*
- **Jiquang Bao** (PIMS): *Local Estimates for Special Lagragian Equations in Dimension Three*
- **Changfeng Gui** (UBC):
- **Peter Orland** (CUNY, visiting UBC) $SU(2) \times SU(2)$ *gauging of integrable XXX models*
- **John Harnad** (CRM, Concordia): *Duality in Random Matrices and Biorthogonal Polynomials*

III. Probability and Statistics:

- **Guanglu Gong** (Tsinghua): *The annealing of an iterative system*
- **Yongjin Wang** (Nankai): *A probabilistic analysis to a class of non-linear differential equations on unbounded domains and application to superprocesses*
- **Tianping Chen** (Fudan): *Independent, Principal and Minor Component Analysis*
- **Runchu Zhang** (Nankai): *Optimal Blocking of* 2^{n-k} *and* 3^{n-k} *Fractional Factorial Designs*
- **Martin Barlow** (UBC): *Geometry and escape times for random walks on graphs*
- **Ed Perkins** (UBC): *Degenerate stochastic differential equations and super-Markov chains*
- **Jonathan Taylor** (McGill): *Geometry of smooth Gaussian fields on manifolds*

- **Remco Van der Hofstad** (Microsoft, Delft U of Tech): *Weak interaction limits for one-dimensional polymers*
- **Peter Hooper** (Alberta): *Statistical recognition methods for protein secondary structure*
- **Harry Joe** (UBC): *Continuous time stochastic processes with given univariate marginals*

IV. Wavelets and their Applications:

- **Xingwei Zhou** (Nankai): *Some results on Wavelet frames*
- **Lizhong Peng** (Peking): *Orthogonal Wavelets on the Heisenberg Group*
- **Heping Liu** (Peking): *The Joint Spectral Multipliers on Heidelberg Groups*
- **Ding-Xuan Zhou** (Hongkong City): *Estimating the Approximation Error in Learning Theory*
- **Hoi Ling Cheung** (Hongkong City): *Supports and Local Linear Independence of Multivariate Refinable Functions*
- **Serge Dubuc** (Montreal): *Convergence in Distribution of Hermite Subdivision Schemes*
- **Bin Han** (Alberta): *Symmetry Properties of Multivariate Refinable Functions*
- **Rong-Qing Jia** (Alberta): *Convergence Rates of Cascade Algorithms*
- **Jean-Marc Lina** (Montreal):
- **Remi Vaillancourt** (Ottawa):

V. Computational, Industrial & Applied Analysis:

- **Houde Han** (Tsinghua): *The Numerical solutions of Heat Equation on Unbounded Domains*
- **Dayong Cai** (Tsinghua): *Multi-solution of Power System and its Fast Algorithm*
- **Ping Zhou** (St. Francis Xavier): *Explicit Construction of Multivariate Padé Approximants and Some Applications*
- **Jianwei Hu** (Nankai): *Finite Element-Finite Volume Type Method for Nonlinear Convection-Diffusion Problems and its Applications*
- **Yongji Tan** (Fudan): *On some Inverse Problems*
- **Zhongmin Wu** (Fudan): *Quasi interpolation for solving ordinary differential equations*
- **Yangfeng Su** (Fudan): *Some problems on GTH algorithm for Stochastic matrices*
- **Xunjing Li** (Fudan): *On Optimal Control Theory for Infinite Dimensional Systems*
- **Shufang Xu** (Peking): *Numerical Analysis of the Maximal Solution of the matrix Equation* $X + A^*X^{-1}A = P$
- **Wenxun Xing** (Tsinghua): *Computational Applied Analysis*
- **Yanren Hou** (Xi'An Jiaotong): *Full Discrete Post-processing Procedure to the Galerkin Approximation Based on AIMD*
- **Zheng Jian Hua** (Tsinghua): *Hyperbolic metric and its application in complex dynamics*
- **Huaxiong Huang** (York): *Industrial Analysis*
- **M. Fortin** (Laval): *Computational Analysis*
- **Hermann Brunner** (Memorial U. of Newfoundland):
- **Jianhong Wu** (York): *Neural Networks for Clustering Large Data Sets in High Dimensions*
- **Brian Seymour** (UBC): *Self-similar flows of immiscible fluids*
- **Rex Westbrook** (U. of Calgary): *Sag Bending*
- **Hang Gao** (Northeast Normal U.):
- **Anthony Peirce** (UBC): *Analysis of a novel preconditioner for solving lower rank extracted systems derived from convolution integral equations*
- **Brian Wetton** (UBC): *Industrial and Computational Analysis*
- **Michael Ward** (UBC): *Applied Analysis*
- **Uri Ascher** (UBC): *Multilevel computational techniques for inverse electromagnetic problems in 3D*
- **Steven Ruuth** (SFU): *Strong Stability Preserving (TVD) High Order Time Discretization Methods*

VI. Geometry/Topology:

- **Rick Jardine** (Western Ontario): *Stacks and Homotopy Theory*
- **Maung Min-Oo** (McMaster): *K–area and scalar curvature*
- **Denis Sjerve** (UBC):
- **Youcheng Zhou** (Zhejiang): *On Moeckel-like boundary of the local Siegel disk*
- **Hui Kou** (Sichuan): *U_k–admitting dcpos and the largest tcc subcategories of domains: two topological problems in Domain theory*
- **Jacques Hurtubise** (CRM/McGill): *Representation with Weighted Frames and Framed Parabolic Bundles*
- **Qing Ding** (Fudan): *The Schodinger flow and its application in integrable systems*
- **Eckhard Meinrencken** (Toronto): *The Duflo homomorphism for subalgebras*
- **Xiaojiang Tan** (Peking): *On Petri Map for Rank 2 Vector Bundles*
- **Shaoqiang Deng** (Nankai): *Dipolarizations in Lie Algebras and Homogeous ParaKaehler Manifolds*
- **Jianhua Zheng** (Tsinghua U.): *An application of hyperbolic metric on complex dynamics*
- **Kunio Murasugi** (Toronto): *On double torus knots*
- **K.C. Chang** (Peking): *An Evaluation of Minimal Surfaces*
- **McKenzie Wang** (McMaster): *A Variational Approach for Homogeneous Einstein Metrics*
- **Jinkun Lin** (Nankai): *Some new families of filtration six in the stable homotopy spheres*

VII. Operator Algebra:

- **Shuang Zhang** (Cincinnati): *Purely infinite simple C*-algebras generated by an isometry and a bilateral shift*
- **Mahmood Khoshkam** (U. of Saskatchewan): *On finiteness of the lattice of intermediate subfactors*
- **Allan Donsig** (Nebraska): *Algebraic Isomorphisms of Limit Algebras*
- **Kenneth Davidson** (Waterloo): *Perron–Frobenius Theorem for Completely Positive Maps*
- **Thierry Giordano** (Ottawa):
- **Guanggui Ding** (Nankai): *Some Recent Advances and the Open Problems on Perturbations and Extensions of Isometric operators*
- **Man Duen Choi** (Toronto): *The Norm Estimate for the Sum of Two Matrices*
- **Massoud Amini** (U. of Saskatchewan): *Locally Compact Pro-C^*-algebras*
- **James Mingo** (Queen's): *Spectral Measures of the Almost Mathieu Operator*
- **Andu Nica** (Waterloo): *Levels of operator-valued R-transforms in free probability*
- **Chris Phillips** (U. of Oregon): *Ordered K-theory for crossed products of the Cantor set by free minimal actions of* $\mathbf{Z}^d$
- **Sam Walters** (UNBC): *The structure of the Fourier transform on the rotation algebra*
- **Qing Lin** (U. of Victoria and Ericsson):

VIII. Mathematical Finance:

- **Abel Cadenillas** (Alberta): *Executive Stock Options with Effort Disutiliy and Choice of Volatility*
- **Duo Wang** (Peking): *Bifurcation of the ABS model of fundamentals versus trend chasers with positive share supply*
- **John Walsh** (UBC):
- **Junyi Guo** (Nankai): *Compound models and their ruin probabilities for risk processes with correlated aggregate claims*
- **Ali Lari-Lavassani** (Calgary):
- **Uli Haussmann** (UBC): *A Stochastic Equilibrium Economy with Optimal Capacity Expansion*

IX. ODE and Dynamical systems:

- **Weinian Zhang** (Sichuan U.): *Bifurcations of a Polynomial Differential System of Degree n in a Biochemical Reaction*
- **Leon Glass** (McGill): *Dynamics in High Dimensional Models of Genetic Networks*
- **William Langford** (Guelph): *Synchronized Chaos for Authentication and Communication*
- **Jacques Belair,** (Montréal): *Delays and dynamics in neural networks*
- **Meirong Zhang** (Tsinghua): *The rotation number approach to eigenvalues of the one-dimensional p-Laplacian*
- **Wagne Nagata** (UBC): *Reaction-diffusion models of growing plant tips: bifurcations on hemispheres*
- **Weigu Li** (Peking): *Planar Analysis Vector Fields with Generalized Rational First Integrals*
- **Michael Li** (Alberta): *Poincaré s Stabiltiy Conditions for Orbital Stability of Almost Periodic Solutions*
- **Christiane Rousseau** (Montréal): *Finite cyclicity of graphics of planar vector fields and Hilberts 16th problem for quadratic vector fields*
- **Florin Diacu** (Victoria): *On the dynamics of the classical atom*
- **Oleg Bogoyavlenskij** (Queen's): *Lie algebraic invariant meaning of the non-degeneracy conditions in the Kolmogorov - Arnold - Moser (KAM) theory*
- **Victor LeBlanc** (Ottawa): *Forced symmetry breaking for spiral waves*
- **Yun Tang** (Tsinghua): *Singularities of quasi-linear DAE in the setting of real algebraic geometry*

From left: Zhiming Ma (President of Chinese Math. Society), K. C. Chang (Director at Chinese Ministry of Education) and L. Z. Peng (Secretary of Chinese Math. Society) at the CCC opening ceremony.

Second Pacific Rim Conference on Mathematics, Taipei, Taiwan, January 4–8, 2001

Organizing Committee: Shui-Nee Chow (National U. of Singapore), Craig Evans (U. of California, Berkeley), Fon-Che Liu (Academia Sinica, Taiwan), Masayasu Mimura (Hiroshima U.), Robert Miura (PIMS), Ian Sloan (U. of New South Wales) and Roderick S.C. Wong (Liu Bie Ju Centre for Mathematical Sciences, Kowloon)

Approximately 150 mathematicians from Australia, Canada, China, France, Hong Kong, India, Japan, Korea, New Zealand, the Philipines, Singapore, Switzerland, Tajikstan, the United States, and Uzbekistan attended the Second Pacific Rim Conference on Mathematics on January 4–8, 2001 at Academia Sinica in Taipei, Taiwan. The six main themes of the Conference were Combinatorics, Computational Mathematics, Dynamical Systems, Integrable Systems, Mathematical Physics, and Nonlinear Partial Differential Equations.

There were 12 one-hour plenary talks, approximately forty 45 minute invited talks, and 55 contributed papers. The plenary talks were excellent with each speaker giving a general background for the audience and then presenting more details later in the talk.

Plenary Speakers:

Ian Affleck (UBC): *Applications of Boundary Conformal Field Theory to Condensed Matter Physics*

Craig Evans (UC Berkeley): *Homogenization and Hamiltonian Dynamics*

Joel Feldman (UBC): *Asymmetric Fermi Surfaces for Magnetic Schrodinger Operators*

Genghua Fan (Academia Sinica, China): *Integer Flows and Circuit Covers*

Alberto Grunbaum (UC Berkeley): *Diffuse Tomography: An Nonlinear Inverse Problem in Medical Imaging*

Song-Sun Lin (Chiao Tung U., Taiwan): *Celluar neural Networks: Pattern and Waves*

Junkichi Satsuma (Univ. of Tokyo):

Leon Simon (Stanford): *Singularities of Minimal Surfaces and Harmonic Maps*

Stephen Smale (City U, Hong Kong): *On the Mathematics of Learning Theory*

Gilbert Strang (MIT): *Structured Matrices and Good Bases*

Yingfei Yi (Georgia Tech): *A Quasi-Periodic Poincar-'s Theorem*

Xuding Zhu (Sun Yat-Sen U., Taiwan): *Circular Chromatic Number and Circular Flow Number of Graphs*

The two plenary speakers from Canada were in the Mathematical Physics Session, along with Izabella Laba (UBC), Robert McCann (Toronto), and Gordon Semenoff (UBC), who were invited speakers. Brian Alspach (Regina) and Rong-Qing Jia (Alberta) were invited speakers in the Combinatorics and Computational Mathematics Sessions, respectively. The Canadian Representative on the Organizing Committee was Robert Miura (UBC). PIMS provided support for the Canadian participants in the conference.

A committee meeting was held after the Conference Reception to discuss the site of the Third Pacific Rim Conference on Mathematics and was attended by representatives from Australia, Canada, China, Hong Kong, Japan, Taiwan, and the United States. It was proposed that the next Conference be held in Vancouver in the summer of 2004 under the sponsorship of PIMS. This was accepted enthusiastically and unanimously by the committee, as well as by the participants after it was announced at the Conference Banquet.

Upcoming International Activities:

Pan American Advanced Studies Institute on Inverse Problems and Nonlinear Analysis
Santiago, Chile
January, 2003

3rd Pacific Rim Conference on Mathematics,
Vancouver, Canada
2004