

力学系通信

NO. 19 (1993/06)

力学系通信 NO.19 をお送りします。

相変わらず、情報の集まりが極めて悪いという状況が続いております。近況、研究集会、プレプリント情報などを、是非、私宛にお送り下さるようお願いいたします。

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訃報

京都大学・理学部・数学教室の足立正久先生が、去る3月24日に亡くなられました。慎んでご冥福をお祈り申し上げます。

購読者リスト作成アンケートについて

前号にてお願いいたしました「購読者アンケート」ですが、回答の回収率が良くありません。回答を頂けない場合、購読継続の意思なしと看做し、送付を中止させて頂くことも考えておりますので、是非回答をお送りくださいますようお願い申し上げます。なお、5月末日現在、次の方々からご回答を頂いております。(敬称略)

by e-mail

吉永 哲哉, 徳永 隆治, 柴山 健伸, 藤村 雅代

by snail-mail

足立俊明, 稲葉尚志, 井上友喜, 印南信宏, 岡 宏枝, 加藤和久, 河村新蔵,
倉田雅弘, 国府寛司, 白岩謙一, 鈴木正昭, 高橋陽一郎, 辻井正人, 仲田均,
中根 静男, 森 真, 盛田 健彦

なお、4 ページに「購読者リスト作成アンケートフォーム」をもう一度掲載しておきます。

近況

井上友喜氏 愛媛大学工学部情報工学科に就職 (93/04)
中根静男氏 (東京工芸大学) IHES に滞在 (93/04-94/03)
藤村雅代氏 日本大学理工学部数学教室に就職 (93/04)
酒井一博氏 神奈川大学工学部に転勤 (93/04)

学会・シンポジウム情報 (国内)

エルゴード理論93年度サマーセミナー

1993年7月26日-29日 大阪商工会議所賢島研修センター (三重県志摩郡阿児町)
問い合わせ: 伊藤俊次氏 (津田塾大学)

「ツイストマップとその周辺」研究集会

1993年10月 鳴戸教育大学
問い合わせ: 松岡隆氏 (鳴戸教育大学)

Foliation Tokyo

1993年11月15日-19日 東京工業大学
問い合わせ: 松元重則氏 (日本大学)

International conference on dynamical systems and chaos

1994年5月23日-27日 東京都立大学
問い合わせ: 白岩謙一氏 (東京理科大学)

学会・シンポジウム情報 (国外)

Chaotic numerics

1993/07/12-16, Deakin University, Geelong, Australia ... 巻末資料参照

International conference/Workshop on Dynamical System

1993/08/02 - 08/15, IMPA

FRACTAL 93 "Fractals in the Natural and Applied Sciences"

1993/09/07-10, London, England

Congress on Periodic Orbits of Dynamical Systems

1993/09/27-10/01, Luminy, France (near Marseille)

International Symposium on Nonlinear Theory and its Applications ... 卷末資料参照

1993/12/05-09, Sheraton Waikiki Hotel, HAWAII

Conference on the interaction between functional analysis, Harmonic Analysis, and Probability

... 卷末資料参照

1994/05/30-06/03, University of Missouri

学会・シンポジウム報告

国府寛司氏より、以下のシンポジウム等の報告が寄せられました。巻末に資料を添付しておきます。

International Conference on "Bifurcations in differentiable dynamics"

June 09-13, 1992 [Limburgs Universitair Centrum]

Workshop on Dynamical Systems

August 3-8, 1992 [Porto]

SIAM Conference on Applications of Dynamical Systems

October 15-19, 1992 [Snowbird, Utah]

Dynamical Systems and Bifurcation Theory

August 1992 to June 1993

[The Fields Institute for Research in Mathematical Sciences]

プレプリント情報

([] 内は、所有者 (敬称略))

[稲葉 尚志 (千葉大学教養部数学教室)]

C. Bonatti et `R. Langevin, Un exemple de flot d'Anosov transitif transverse à un tore et non conjugué à une suspension.

購読者リスト作成アンケートフォーム

氏名（ふりがな）：

大学・学部・学科：

職名（大学院生の場合は、学年）：

大学住所（〒をお忘れなく）：

大学電話番号：

e-mail address：

FAX 番号：

自宅住所（〒をお忘れなく：この項目は必ずしも答える必要はありません）：

自宅電話番号（この項目は必ずしも答える必要はありません）：

CHAOTIC NUMERICS

An International Workshop on the Approximation and
Computation of Complicated Dynamical Behaviour

12 — 16 JULY 1993

DEAKIN UNIVERSITY, GEELONG, AUSTRALIA



KEYNOTE SPEAKERS

W. J. Beyn University of Bielefeld
S. N. Chow Georgia Institute of Technology
J. Hale Georgia Institute of Technology
J. Lorenz University of New Mexico

PROGRAM COMMITTEE

P. Kloeden (Geelong) K. Palmer (Miami)
K. Burrage (Brisbane) A. Pokrovskii (Moscow)

Each keynote speaker and other invited speakers will present survey and research lectures. Short talks or computing demonstrations from conference participants are invited. A proceedings of selected papers will be published. The city of Geelong is 80 km south-west of Melbourne.

For additional information and registration forms please contact:

Professor P.E. Kloeden
School of Computing and Mathematics
Deakin University, Geelong
Victoria Australia 3217
Email: kloeden@cm.deakin.OZ.AU
Facsimile: +61 52 27 2028

Professor K. J. Palmer
Department of Mathematics and Computer Science
University of Miami, Coral Gables
Florida 33124 USA
Email: kjp@paris.cs.miami.edu

1993 International Symposium on Nonlinear Theory and its Applications

Sheraton Waikiki Hotel, HAWAII December 5 - 9, 1993

NOLTA '93

HONORARY CHAIRMEN

Kazuo Horiuchi (Waseda Univ.)
Masao Iri (Univ. of Tokyo)

CO-CHAIRMEN

Shun-ichi Amari (Univ. of Tokyo)
Anthony Kuh (Univ. of Hawaii)
Shinsaku Mori (Keio Univ.)

TECHNICAL

PROGRAM CHAIRMAN

Shun-ichi Amari (Univ. of Tokyo)

PUBLICITY

Shinsaku Mori (Keio Univ.)

LOCAL ARRANGEMENT

Anthony Kuh (Dept. of Electrical Engr.,
Univ. of Hawaii, Manoa, Honolulu,
Hawaii, 96822 U.S.A.
Phone: +1-808-956-7527
Telefax: +1-808-956-3427
e-mail: kuh@wiliki.eng.hawaii.edu)

ADVISORY

L. O. Chua (U.C. Berkeley)
R. Eberhart (Research Triangle Inst.)
A. Fettweis (Ruhr Univ.)
L. Fortuna (Univ. of Catania)
W.J. Freeman (U.C. Berkeley)
M. Hasler (Swiss Fed. Inst. of Tech.
Lausanne)
Tatsuo Higuchi (Tohoku Univ.)
Kazumasa Hirai (Kobe Univ.)
Ryogo Hirota (Waseda Univ.)
E.S. Kuh (U.C. Berkeley)
Hiroshi Kawakami (Tokushima Univ.)
Tosiro Koga (Kyushu Univ.)
Tohru Kohda (Kyushu Univ.)
Masami Kuramitsu (Kyoto Univ.)
R.W. Liu (Univ. of Notre Dame)
Tadashi Matsumoto (Fukui Univ.)
A.I. Mees (Univ. of Western Australia)
Michitada Morisue (Saitama Univ.)
Tomomasa Nagashima (Muroran Inst. Tech.)
Tetsuo Nishi (Kyushu Univ.)
J.A. Nossek (Technical University Munich)
Kohshi Okumura (Kyoto Univ.)
T. Roska (Hungarian Academy of Sciences)
Junkichi Satsuma (Univ. of Tokyo)
I.W. Sandberg (Univ. of Texas at Austin)
Chikara Sato (Keio Univ.)
Yasuji Sawada (Tohoku Univ.)
V.V. Shakhgildian (Russian Engr. Academy)
Yoshisuke Ueda (Kyoto Univ.)
Akio Ushida (Tokushima Univ.)
J. Vandewalle (Catholic Univ. of Leuven,
Heverlee)
P. Werbos (National Science Foundation)
A.N. Willson, Jr (U.C.L.A.)
Shuji Yoshizawa (Univ. of Tokyo)
A.H. Zemanian (State Univ. of NY
at Stony Brook)

Call for Papers

The 1993 International Symposium on Nonlinear Theory and its Applications (NOLTA '93) will be held at the Sheraton Waikiki Hotel, Hawaii, on Dec. 5 - 9, 1993. The conference is open to all the world. Papers describing original work in all aspects of Nonlinear Theory and its Applications are invited. Possible topics include, but are not limited to the following:

- *Circuits and Systems
- *Dynamics
- *Bifurcation
- *Oscillations
- *Numerical Methods
- *Self-Validating Numerics
- *Chemistry and Physics
- *Acoustics
- *Circuit Simulation
- *Digital/analog VLSI circuits
- *Power Systems

Nonlinear aspects of:

- *Neural Networks
- *Cellular Neural Networks
- *Biocybernetics
- *Reactive Phenomena
- *Pattern Generation
- *Time Series Analysis
- *Mechanics
- *Control
- *Communication
- *Image Processing
- *Other Related Areas
- *Chaos
- *Fractals
- *Soliton
- *Fuzzy
- *Information Dynamics
- *Chua's Circuits
- *Fluid Mechanics
- *Optics
- *Economics
- *Power Electronics

Organizers:

Research Society of Nonlinear Theory and its Applications, IEICE
Dept. of Elect. Engr., Univ. of Hawaii

In cooperation with:

IEEE Hawaii Section
IEEE Circuits and Systems Society
IEEE Neural Networks Council
International Neural Network Society
IEEE CAS Technical Committee on Nonlinear Circuits and Systems
Technical Group of Nonlinear Problems, IEICE
Technical Group of Circuits and Systems, IEICE

Authors are invited to submit three copies of a summary of 2 or 3 pages to:

Technical Program Chairman
Prof. Shun-ichi Amari
Faculty of Engr.,
University of Tokyo, Bunkyo-ku, Tokyo, 113 Japan
Telefax: +81-3-5689-5752
e-mail: amari@sat.t.u-tokyo.ac.jp

The summary should include the author's name(s), affiliation(s) and complete return address(es). The authors should also indicate one or more of the above categories that best describe the topic of the paper.

Deadline for submission of summaries: August 15, 1993
Notification of acceptance: Before September 15, 1993
Deadline for camera-ready manuscripts: November 1, 1993

SECRETARIATS

Shin'ichi Oishi (Waseda Univ.)
Mamoru Tanaka (Sophia Univ.)

International Conference on
**"Bifurcations in
differentiable dynamics"**

June 09-13, 1992

**LIMBURGS
UNIVERSITAIR
CENTRUM**

Proposed Titles of talks :

D. Armbruster	Topological constraints for explicit symmetry breaking
J. Artes Ferragud	Saddle connections for quadratic gradient vector fields
P. Ashwin	Symmetry in identical oscillator networks
C. Baesens	Dynamic bifurcations in slow-fast analytic mappings
T. Bridges	Spatial Ham. structure and spatially quasi-per. travelling waves
H. Broer	On the B.T.-bifurcation for diffeomorphisms
P. Brunovsky	Normal forms for singularly perturbed equations
D. Chillingworth	Geometry of an impact oscillator
P. Chossat	Bifurcation from symmetric homocl. cycles
C. Christopher	Limit cycles in polynomial systems
G. Dangelmayr	Hopf bif. with $D_m \times D_n$ -symmetry and interacting clusters of oscillators
F. Davidson	Promising directions of bifur. in aR-D system
W. de Melo	Bifurcations of flows on surfaces
M. Dellnitz	Symmetry creation in PDE's
B. Deng	Homoclinic twist and chaos
J.-M. Gambaudo	Cascade of periodic orbits for surface diffeomorphisms
A. Gasull	Euler-Jacobi formula for double points and applications to differential equations
M. Golubitsky	Symmetric chaos
A.J. Homburg	Bifurcations of saddle-saddle type hom. orbits in v. f.
M. Kern	Travelling waves in a model of the BZR
H. Kielhöfer	Separation of global sol. branches of elliptic systems via nodal prop.
J. Knobloch	Reduction of bifurcation problems with symmetries
H. Kokubu	A degenerate singularity generating geometric Lorenz attractors
B. Krauskopf	Convergence of Julia sets in the approx. of λe^z by $\lambda(1 + z/d)^d$

M. Krupa	Asympt. stability of robust heteroclinic cycles in systems with symmetry
R. Lauterbach	Symmetry breaking for semi linear elliptic equations
Li Chengzi	A 3-parameter unfolding of an integr. quadr. syst. with 2 centers
J. Llibre	Global structural stability of planar Hamiltonian vector fields
H. Oka	Singular perturbations of autonomous ODE and heteroclinic bifurcations
H. Osinga	Intermittency during a Hopf bifurcation
M.-C. Pérouème	Reversible 1-1 resonant vector fields
E. Ponce	Triple-zero degeneracy : reduced symbolic normal form calculation and application to an electronic oscillator
R. Roussarie	Quasi-regularity property for hyperbolic graphics
C. Rousseau	Hilbert's 16th problem for quadratic vector fields
J. Sanders	Nilpotent normal form with constant perturbation
B. Sandstede	The non-principal homoclinic bifurcation
S. Schechter	Rate of convergence of numerical approximation to hom. and heter. bif. points
J. Scheurle	Discretization of autonomous systems and rapid forcing
D. Schlomiuk	Integrable and non int. systems with invariant algebraic curves
C. Simo	Stability regions near ell. fix points in 4-dim. sympl. maps
J. Sotomayor	Bifurcations of umbilic points
F. Takens	Dynamical systems with $SO(2)$ symmetry and mixed spectra
M.A. Teixeira	Bifurcations of sliding vector fields
S. van Gils	Travelling wave solutions in perturbed KdV equations
Ye Yanquian	Bifurcation diagrams of quadr. diff. systems with one focus and one saddle
Yingfei Yi	Hopf bifurcations from higher dimensional tori
Zhang Zhifen	Number of limit cycles of quadratic Ham. syst. after pert.
H. Zoladek	Solution of the center problem

(Preliminary Announcement)
The Department of Mathematics at
the
University of Missouri-Columbia
announces
a
Conference
On the Interaction Between
Functional Analysis,
Harmonic Analysis, and
Probability.

May 30- June 3, 1994

Supported by The University of Missouri
Further funding will be thought from NSF

The following people have tentatively agreed to be speak.
We are still in the process of contacting additional main
speakers. An updated list will be sent later.

Earl Berkson (University of Illinois)
Jean Bourgain (I H E S, France)
Don Burkholder (University of Illinois)
Robert Fefferman (University of Chicago)
William B. Johnson (Texas A&M)
Peter Jones (Yale University)
Gilles Pisier (University of Paris/Texas A&M)
Richard Rochberg (Washington University)
Michel Talagrand (University of Paris/Ohio-State University)
Lior Tzafriri (Hebrew University of Jerusalem)
Guido Weiss (Washington University)

For Additional Information send an e-mail message to:

conf@esaab.cs.missouri.edu

**Workshop on Dynamical Systems
Porto, August 3-8, 1992**

Monday, August 3

	Main Lecture Room		
10:00 10:05	Welcome to Participants		
10:05 11:05	F. Takens Homoclinic tangencies: moduli and topology of separatrices.		
	COFFEE BREAK		
11:30 12:30	J. Smillie Complex Hénon maps and a real application.		
	Main Lecture Room	Room LW	
14:00 15:00	S. Bullett Iterated correspondences, the modular group and the Mandelbrot set.	S. Yakovenko Solution of the Hilbert-Arnold problem for elementary polycycles.	
	COFFEE BREAK		
15:30 16:30	J. Gambaudo Cascades of periodic orbits.	R. MacKay Cantori for multi-harmonic maps:	
	COFFEE BREAK		
	Room LW	Room SB	Room GT
17:00 17:20	T. Bogenschuetz Symbolic dynamics for expanding random dynamical systems.	A. I. Alonso/R. Obaya Invariant absolutely continuous measures for the almost-periodic Schroedinger equation.	D. Soerensen The Douady accumulation theorem.
17:30 17:50	M. Gundlach An evolutionary formalism for products of positive random matrices.	J. Steif Non-uniqueness of measures of maximal entropy for subshifts of finite type for $d > 1$.	G. Levin Bounds for multipliers.

**Workshop on Dynamical Systems
Porto, August 3-8, 1992**

Tuesday, August 4

	Main Lecture Room		
9:15 10:15	A. Katok Dynamics of higher rank Abelian group actions.		
	COFFEE BREAK		
10:45 11:45	L.-S. Young Abundance of positive Lyapunov exponents for cocycles.		
	Room LW	Room SB	Room GT
12:00 12:20	O. Ruggiero Expansive geodesic flows in manifolds with no conjugate points.	R. Kenyon Interval exchanges and the group of paths in R^2 .	R. McLachlan Symplectic integration of Hamiltonian wave equations.
	Main Lecture Room	Room LW	
14:00 15:00	R. Perez Marco Indifferent fixed points of holomorphic maps and analytic diffeomorphisms of the circle.	W. de Melo Full families of multimodal map.	
	COFFEE BREAK		
15:30 16:30	P. Atela The charged isosceles three-body problem.	L. Diaz Hyperbolicity and the creation of heterodimensional cycles.	
	COFFEE BREAK		
	Room LW	Room SB	Room GT
17:00 17:20	H. Kokubu A degenerate singularity generating geometric Lorenz attractor.	J. S. Ramos/R. Severino K-theory and iterated maps of the interval.	T. Ward A family of Markov shifts with group alphabets.
17:20 17:50	C. Penrose Limit sets for correspondences.	G. Contreras The Hausdorff dimension of the harmonic class of negatively curved surfaces.	S. Troubtszekoy Markov partitions and shadowing for non-uniformly hyperbolic systems with singularities.
18:30	«Porto»		

Workshop on Dynamical Systems
Porto, August 3-8, 1992

Wednesday, August 5

	Main Lecture Room		
9:15 10:15	J. Palis Recent developments in non-hyperbolic dissipative and conservative dynamics: the Portuguese contribution.		
	COFFEE BREAK		
10:45 11:45	P. Collet Asymptotic laws for statistics of visits in expanding maps of the interval.		
	Room LW	Room SB	Room GT
12:00 12:20	V. Baladi The spectrum of randomly perturbed expanding maps.	M. Elbially Linearisation of vector fields and diffeomorphisms near resonant hyperbolic fixed points.	J. Schmeling The singularity spectrum of self-affine fractals.
	Main Lecture Room		Room LW
14:00 15:00	B. Branner Topological conjugacy of complex cubic polynomials.		R. Labarca Bifurcation of simple singular cycles.
	COFFEE BREAK		
15:30 16:30	F. Przytycki On iterations of some degree 3 rational maps on the Riemann sphere.	J. Poeschel On exponential stability times in Hamiltonian systems.	
17:30 20:30	Excursion		

Workshop on Dynamical Systems
Porto, August 3-8, 1992

Thursday, August 6

	Main Lecture Room		
9:15 10:15	D. Sullivan Conformal structures in dynamics.		
	COFFEE BREAK		
10:45 11:45	F. Ledrappier Dimension spectrum and dynamics.		
	Room LW	Room SB	Room GT
12:00 12:20	P. Thieullen Positive Lyapunov exponent for generic one-parameter families of unimodal maps.	Y. Yamagishi Center manifolds for the dynamical systems associated to Durand-Kerner's method.	A. Pumarino Existence of attractors in the Silnikov configuration.
	Main Lecture Room		Room LW
14:00 15:00	H. Weiss Symbolic dynamics and Hausdorff dimension.		K. Khanin RG approach to KAM theory with two degrees of freedom.
	COFFEE BREAK		
15:30 16:30	S. Newhouse Geometric approach to the structure of Hénon maps.	R. de la Llave Rigidity properties of dynamical Cantor sets in one dimension.	
	COFFEE BREAK		
	Room LW	Room SB	Room GT
17:00 17:20	E. Vargas Measures of minimal sets in polimodal maps.	G. Popov Length spectrum invariant of Riemannian manifolds.	S. Ibañez Chaotic behaviour in the unfolding of a nilpotent singularity in dimension three.
17:30 17:50	J. M. Ribeiro Arbitrary growth and oscillation versus finite time blow-up in nonlinear Schrödinger equations.	A. S. Kuenzi The boundedness of dual billiard orbits.	R. Sharp Closed orbits in homology classes for Anosov flows.

**Workshop on Dynamical Systems
Porto, August 3-8, 1992**

Friday, August 7

	Main Lecture Room		
9:15 10:15	J.-C. Yoccoz Julia and John.		
	COFFEE BREAK		
10:45 11:45	M. Lyubich Geometry and attractors of unimodal maps.		
	Room LW	Room SB	Room GT
12:00 12:20	P. Ventura All suspension flows of irreducible subshifts of finite type are equivalent.	R. Markarian Ergodic plane billiards. The cardioid.	M. Sarreira Iterated complex maps as combinatorial dynamical systems.
	Main Lecture Room		Room LW
14:00 15:00	A. Douady Queer components of the Mandelbrot set and the real axis: some ideas (results?) of McMullen (and Świątek?).	L. H. Eliasson Ergodic skew-product flows on $T^d \times SO(3, R)$.	
	COFFEE BREAK		
15:30 16:30	M. Shishikura The parabolic bifurcation of rational maps and geometric limits.	M. Jakobson Ergodic theory and geometry of some nonhyperbolic maps.	
	COFFEE BREAK		
	Room LW	Room SB	Room GT
17:00 17:20	J. Casasayas Knots and links in integrable Hamiltonians.	N. Stollenwerk Empirical evidence for transient chaos in population dynamics.	S. Troubetzkoy Local instability of orbits in polygonal and polyhedral billiards.
17:30 17:50	J. Graczyk Singular measures in circle dynamics.	A. G. Aleksandrov On the DE Rham Lemma for functions with nonisolated critical points.	E. Gutkin Caustics for inner and outer billiards.

**Workshop on Dynamical Systems
Porto, August 3-8, 1992**

Saturday, August 8

	Main Lecture Room
9:30 10:30	K. Schmidt Dynamics of Z^n actions.
	COFFEE BREAK
11:00 12:00	E. Ghys Rigidity of Fuchsian groups.

SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS
CONFERENCE PROGRAM

SIAM Conference on

OCTOBER 15 - 19, 1992

APPLICATIONS OF

SNOWBIRD RESORT AND CONFERENCE CENTER

DYNAMICAL

SNOWBIRD, UTAH

SYSTEMS

.....
*Sponsored by SIAM Activity Group on
Dynamical Systems*

Conference Themes

Applications in the life sciences • Applications in optics and beam dynamics
Complex behavior in physical systems • Determination and description of chaos
Hamiltonian systems and their perturbations

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DEADLINE DATES

Hotel Registration
September 21, 1992

Advance Conference Registration
October 2, 1992

FUNDING AGENCIES

SIAM would like to thank both the Office of Naval Research, Department of Energy, and the National Science Foundation for their support in conducting this conference.

ORGANIZING COMMITTEE

Peter W. Bates (Co-chair)
Department of Mathematics
Brigham Young University

Christopher K.R.T. Jones (Co-chair)
Division of Applied Mathematics
Brown University

GET-TOGETHERS

SIAM Welcoming Reception
Wednesday, October 14, 1992
6:30 PM - 8:30 PM
Golden Cliff
(Level B of Cliff Lodge)
Cash Bar and mini hors d'oeuvres.

Business Meeting
SIAM Activity Group on Dynamical Systems
Friday, October 16, 1992
8:00 PM - 9:00 PM
Ballroom 1&2

Anyone interested in the activity group is welcome to attend.

Poster Session
Saturday, October 17, 1992
7:30 PM - 9:30 PM
Golden Cliff
(Level B of Cliff Lodge)

Come and talk with your colleagues and enjoy complimentary beer, sodas and chips.

**Trip to Salt Lake City and
Mormon Temple (Tabernacle Choir)**
Sunday, October 18, 1992
7:30 AM - 12:00 Noon

Board buses in front of Cliff Lodge at 7:45 AM. You will enjoy a continental breakfast while a guide offers a description of Little Cottonwood Canyon. This canyon played a significant part in the settling of the Salt Lake Valley. Today, the canyon is home to a gigantic genealogical records vault which is carved in the granite walls that line the canyon. Little Cottonwood is also home to two major ski resorts. Once in Salt Lake, which is an hour's drive from Snowbird, you will stop at Historic Temple Square for the live radio broadcast of the Mormon Tabernacle Choir. Following the broadcast, you will visit the Capitol and Beehive House, city founder Brigham Young's home. You will be served refreshments on your trip back to Snowbird. Cost \$25.00

PROGRAM-AT-A-GLANCE

**WEDNESDAY,
OCTOBER 14**

6:00 PM-8:00 PM
Registration opens
Ballroom Foyer

THURSDAY, OCTOBER 15

- 7:45 AM** Registration opens
Ballroom Foyer
- 8:45** Opening Remarks
Peter W. Bates and Christopher K.R.T. Jones
Ballroom 1&2
- 9:00 IP1** Metaphors, Models and Mathematics, or How Strange is Turbulence?
Philip Holmes
Ballroom 1&2
- 10:00** Coffee
Golden Cliff Room
-
- 10:15** Concurrent Sessions
- MS1** Integrable Systems
Organizers: Athanassios S. Fokas and Israel M. Gel'fand
Ballroom 1&2
- MS2** Geometric Methods for Maps of the Plane
Organizer: Marcy Barge
Magpie Room
- MS3** Nonlinear Control, Dynamics, and Estimation
Organizer: Christopher I. Byrnes
Wasatch Room
- MS4** AIDS Epidemiology and Dynamical Models
Organizer: Ann Stanley
Maybird Room
- CP1** Computation of Global Structures
Superior B Room
- CP2** Oscillation and Invariance 1
Superior A Room
- 12:15 PM** Lunch
- 1:30 IP2** Ergodic Theory of Strange Attractors
Lai-Sang Young
Ballroom 1&2
-
- 2:30** Concurrent Sessions
- MS5** Hyperbolicity in Skew-Product Flows
Organizer: Russell A. Johnson
Magpie Room
- MS6** Turbulence and Wavelets
Organizer: Katepalli R. Sreenivasan
Wasatch Room
- MS7** Coupled Oscillators
Organizer: Steven H. Strogatz
Maybird Room
- MS8** Infinite Dimensional KAM Theory
Clarence E. Wayne
Ballroom 1&2
- CP3** Spatial Structures
Superior B Room
- CP4** Stability and Approximation
Superior A Room
- 4:30** Coffee
Golden Cliff Room
- 5:00 IP3** Complex Polynomial Dynamics
John Milnor
Ballroom 1&2
-
- 6:00** Concurrent Sessions
- CP5** Dynamics of Motion
Magpie Room
- CP6** Resonances
Wasatch Room
- CP7** Chaotic Motion
Maybird Room

FRIDAY, OCTOBER 16

- 7:30 AM** Registration opens
Ballroom Foyer
- 8:30 IP4** Chaos in Near-Integrable Systems
David W. McLaughlin
Ballroom 1&2
- 9:30** Coffee
Golden Cliff Room
-
- 10:00** Concurrent Sessions
- MS9** Defects and Singularities
Organizers: Paul Fife and Peter Sternberg
Ballroom 1&2
- MS10** Controlling Chaos
Organizer: David F. Delchamps
Magpie Room
- MS11** Saddle Orbits
Organizer: Eric Kostelich
Wasatch Room
- CP8** Phase Space Reconstruction and Time Series 1
Superior A Room
- CP9** Oscillation and Invariance 2
Superior B Room
- CP10** Symmetry in Dynamical Systems
Maybird Room
- 12:00 PM** Lunch
- 1:30 IP5** Computational Complexity and Chaos
Lenore Blum
Ballroom 1&2
-
- 2:30** Concurrent Sessions
- MS12** Dynamical Problems in Theoretical Chemistry
Organizers: Gregory Ezra and and Stephen Wiggins
Magpie Room
- MS13** Stochastic Resonance
Organizer: Kurt Wiesenfeld
Ballroom 1&2
- MS14** Recent Developments in Differential-Delay Equations
Organizers: John Mallet-Paret and Roger Nussbaum
Wasatch Room
- CP11** Taylor-Couette Flow
Maybird Room
- CP12** Phase Space Reconstruction and Time Series 2
Superior B Room
- 4:30** Coffee
Golden Cliff Room
- 5:00 IP6** Splitting Separatrices and Arnol'd Diffusion
Giovanni Gallavotti
Ballroom 1&2
-
- 6:00** Concurrent Sessions
- CP13** Delay Equations
Wasatch Room
- CP14** Fractals and Invariant Measures
Superior B Room
- CP15** Homoclinic Orbits and Chaos 1
Maybird Room
- 8:00** Business Meeting
SIAM Activity Group on Dynamical Systems
Ballroom 1&2

PROGRAM-AT-A-GLANCE

SATURDAY, OCTOBER 17

- 7:30 AM Registration opens
Ballroom Foyer
- 8:30 IP7 **Dynamical Systems Problems for the Superconducting Super-Collider**
James A. Ellison
Ballroom 1&2
- 9:30 Coffee
Golden Cliff Room
- 10:00 **Concurrent Sessions**
- MS15 **Invariant Manifolds**
Organizer: Kening Lu
Magpie Room
- MS16 **Nonlinear Optics and Hamiltonian Systems**
Organizer: William L. Kath
Ballroom 1&2
- MS17 **The Dynamics for Patterns in Excitable Media**
Organizer: James P. Keener
Wasatch Room
- MS18 **Dynamics of Mechanical Systems**
Mark Levi
Maybird Room
- CP16 **Control of Dynamical Systems**
Superior A Room
- CP17 **Fluids 1**
Superior B Room
- 12:00 PM Lunch
- 1:30 IP8 **Bifurcations and Traveling Waves in a Delayed Partial Differential Equation**
Michael C. Mackey
Ballroom 1&2
- 2:30 **Concurrent Sessions**
- MS19 **Dynamics of Infinite-Dimensional Problems**
Organizer: Shui-Nee Chow
Ballroom 1&2
- MS20 **Nonlinear Optics**
Organizer: Jerome V. Moloney
Magpie Room
- MS21 **Neural Networks**
Organizer: Stephen Grossberg
Wasatch Room
- CP18 **Computational Dynamical Systems 1**
Maybird Room
- CP19 **Physical Applications 1**
Superior A Room
- CP20 **Fluids 2**
Superior B Room
- 4:30 Coffee
Golden Cliff Room
- 5:00 IP9 **Chaos and Fractals in Physiology and Medicine**
Ary L. Goldberger
Ballroom 1&2
- 7:30-9:30 **Poster Session**
Golden Cliff Room and Ballroom Foyer

SUNDAY, OCTOBER 18

- 7:30 AM Buses leave for Salt Lake City tour and Mormon Temple
Cliff Lodge
- 12:00 PM Buses return from tour
- 12:00 Registration opens
Ballroom Foyer
- 12:30 - 3:00
- MS22 **Inertial Manifolds and Low Dimensional Dynamics of PDEs (Part 1 of 2)**
Organizers: Yannis Kevrekidis and Edriss S. Titi
Ballroom 1&2
- 1:00 **Concurrent Sessions**
- MS23 **Application of Dynamical Systems to Information Theory**
Roy L. Adler
Magpie Room
- MS24 **Computer Techniques for the Numerical Study of Dynamical Systems**
Organizer: Celso Grebogi
Wasatch Room
- MS25 **Bursting Oscillations in Biological Systems**
Organizers: David H. Terman and John Rinzel
Maybird Room
- CP21 **Physical Applications 2**
Superior A Room
- CP22 **Homoclinic Orbits and Chaos 2**
Superior B Room
- 3:00 Coffee
Golden Cliff Room
- 3:30 IP10 **Stationary and Turbulent Patterns in a Reaction-Diffusion System**
Harry L. Swinney
Ballroom 1&2
- 4:30 IP11 **Symmetric Chaos**
Martin Golubitsky
Ballroom 1&2
- 7:30 **Concurrent Sessions**
- MS26 **Inertial Manifolds and Low Dimensional Dynamics of PDEs (Part 2 of 2)**
Organizers: Yannis Kevrekidis and Edriss S. Titi
Ballroom 1&2
- MS27 **Signal Processing and Chaos (Part 1 of 2)**
Organizer: Louis M. Pecora
Magpie Room
- MS28 **Qualitative Results for Partial Differential Equations**
Organizers: Norman Dancer and Peter Hess
Wasatch Room
- MS29 **The Numerical Treatment of PDEs with Symmetry**
Organizer: Michael Dellnitz
Maybird Room
- CP23 **Biological Applications 1**
Superior B Room
- CP24 **Physical Applications 3**
Superior A Room

MONDAY, OCTOBER 19

- 8:00 AM Registration opens
Ballroom Foyer
- 8:30 IP12 **Stability, Instability and Bifurcation by the Energy-Momentum Method**
Jerrold E. Marsden
Ballroom 1&2
- 9:30 Coffee
Golden Cliff Room
- 10:00 **Concurrent Sessions**
- MS30 **New Methods of Embedding and Analysis for Noisy Chaotic Data**
Organizer: Robert Cawley
Magpie Room
- MS31 **Applications of Dynamical Systems Methods in Nonlinear Optics**
Organizer: Darryl Holm
Wasatch Room
- MS32 **Chaotic Transport for Hamiltonian Systems**
Organizer: James D. Meiss
Maybird Room
- MS33 **Signal Processing and Chaos (Part 2 of 2)**
Organizer: Louis M. Pecora
Ballroom 1&2
- CP25 **Computational Dynamical Systems 2**
Superior A Room
- CP26 **Biological Applications 2**
Superior B Room
- 12:00 PM Conference Adjourns

CP = Contributed Presentation
IP = Invited Presentation
MS = Minisymposium



McMaster University



University of Toronto



University of Waterloo

THE FIELDS INSTITUTE FOR RESEARCH IN MATHEMATICAL SCIENCES

Dynamical Systems and Bifurcation Theory August 1992 to June 1993

Program Committee: J. Chadam (McMaster), L. Glass (McGill), W. Langford (Guelph)
J. Marsden (Fields), W.F. Shadwick (Fields)

The program will focus on Hamiltonian Bifurcations, Homoclinic Chaos, Quasiperiodic Flows, Dynamic Bifurcations with Symmetry and Pattern Formation. Applications to the earth and biological sciences will also be stressed from the PDE, symmetry/group theoretic and lattice gas cellular automata viewpoints. There will be Intensive Course Modules covering these topics. The following Research Workshops are being organized: (exact dates tentative)

October 20 - 25	Conservative Systems and Quantum Chaos
November 16 - 22	Normal Forms, Homoclinic Bifurcations and Chaos
February 22 - 28	Pattern Formation and Symmetry Breaking
March 22 - 28	Pattern Formation in Earth Sciences and Biology
May 3 - 9	Ecological Systems
June 7 - 13	Pattern Formation and Cellular Automata

Experts who have expressed an interest in participating include:

D. Armbruster (Arizona State), L. Bates (Calgary), H. Broer (Groningen), S.-N. Chow (Georgia Tech), R. Cushman (Utrecht), G. Doolen (Los Alamos), G. Iooss (Nice), M. Field (Sydney), P. Fife (Utah), H. Freedman (Alberta), W. Gilbert (Waterloo), M. Golubitsky (Houston), B. Hasslacher (Los Alamos), K. Huseyin (Waterloo), R. Kapral (Toronto), H. Keller (Caltech), B. Keyfitz (Houston), K. Kirchgassner (Stuttgart), E. Knobloch (Berkeley), M. Krupa (Groningen), A. Lawniczak (Guelph), J. Mallet-Paret (Brown), J. Marsden (Fields), B. Matkowsky (Northwestern), R. Miura (British Columbia), J. Murray (Washington), W. Nagata (British Columbia), S. Namachchivaya (Illinois), S. Newhouse (North Carolina), P. Ortoleva (Indiana), G. Oster (Berkeley), W. Peltier (Toronto), T. Ratiu (Santa Cruz), D. Rod (Calgary), D. Rothman (MIT), J. Sanders (Amsterdam), D. Sattinger (Minnesota), J. Scheurle (Hamburg), I. Stewart (Warwick), F. Takens (Groningen), J. Tyson (VPI), A. Vanderbauwhede (Gent), S. van Gils (Enschede), E.R. Vrscay (Waterloo), B. Wetton (British Columbia), S. Wiggins (Caltech), J. Wu (York). Other participants are to be announced, including the Fields Institute Fellows.

Persons interested in participating in the program should contact the Program Committee at the addresses listed below.

J. Chadam (McMaster, 416-525-9140 x3426, chadam@fields.waterloo.edu)
L. Glass (McGill, 514-398-4338, md56@musica.mcgill.ca),
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or

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McMaster University



University of Toronto



University of Waterloo

THE FIELDS INSTITUTE FOR RESEARCH IN MATHEMATICAL SCIENCES

On November 8 1991 funding was announced for a major new research institute named in honour of the Canadian mathematician John Charles Fields (1863-1932) who conceived the award now known as the Fields Medal. The Fields Institute is a joint effort of McMaster University, the University of Toronto and the University of Waterloo. Other universities across Canada have been invited to affiliate with it. The Institute is funded by new money from the Ontario Ministry of Colleges and Universities and the Committee for Collaborative Research Initiatives of the Natural Sciences and Engineering Research Council of Canada. It is designed to increase activity in leading edge mathematical sciences research in Canada, to provide additional opportunities for graduate training and to improve interaction with science and industry.

Jerrold E. Marsden is the Institute Director and William F. Shadwick (University of Waterloo) is Deputy Director. Carl Riehm (McMaster University) and Paul Selick (University of Toronto) are Associate Directors.

The Institute will have no permanent faculty but will sponsor research programs of one or more academic terms in length, selected from mathematical research proposals submitted to its Scientific Advisory Panel by the Canadian research community. Short courses for graduate students will be an integral part of every research program of the Institute.

In the current start-up year, the topic of concentration is Control Theory, focusing on Stabilization, Control and Design of Flexible Structures and Control of Mechanical Systems. The Fields Institute has selected Dynamical Systems and Bifurcation Theory as its research program in the 1992-93 academic year.

A national call for proposals for programs for future years has been made. Programs will be selected from these proposals by the Fields Institute Scientific Advisory Panel: Jerrold E. Marsden Director and Chairman, William F. Shadwick Deputy Director, and James G. Arthur, University of Toronto, Roger W. Brockett, Harvard University, Stephen A. Cook, University of Toronto, Kenneth R. Davidson, University of Waterloo, Leon Glass, McGill University, Werner Israel, University of Alberta, David Mumford, Harvard University, Louis Nirenberg, New York University, Victor Snaith, McMaster University.

The Fields Institute has elected its Board of Directors consisting of Peter Nicholson, Chairman (Senior Vice President, Bank of Nova Scotia), David Boyd (University of British Columbia), Arthur Carty (University of Waterloo), John Chadam (Canadian Applied Mathematics Society), Ron Childs (McMaster University), Peter Fillmore (Dalhousie University), Janet Halliwell (Chairman, Science Council of Canada), James Keffer (University of Toronto), Jerrold E. Marsden, Carl Riehm (McMaster University), Paul Selick (University of Toronto), William F. Shadwick.

The Institute is located initially at the University of Waterloo while plans for a permanent site are developed. For more information contact: Elizabeth Reidt, Fields Institute for Research in Mathematical Sciences, 185 Columbia Street West, Waterloo Ontario Canada N2L 5Z5 at 519 725-0096 or reidt@fields.waterloo.edu.

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Supported by the Ministry of Colleges and Universities of Ontario and the Natural Sciences and Engineering Research Council of Canada