

# 力学系通信

NO. 16 (1992/05)

今回から、富山医科薬科大学・笹野が、お世話させていただきます。

4月に出す予定が、中津川の勉強会などの関係で私がバタバタしていたため、今頃になってしまいました。遅れたことをお詫びいたします。

今後とも、情報等を私宛にお送り下さるようお願いいたします。

笹野 一洋

e-mail : ksasano@tansei.cc.u-tokyo.ac.jp

FAX : 0764-34-4656 (「数学・笹野」宛にお願いします。)

snail mail : 〒930-01 富山市杉谷2630

富山医科薬科大学 数学教室

tel : 0764-34-2281 ext. 2740 ( or ext. 2759 : 一般教育連絡室)

## 近況

白岩 謙一 氏 : 1992/04

東京理科大学基礎工学部に異動 (名大教養部から)

山岸 義和 氏 : 1992/04

龍谷大学理工学部数理情報学科に就職 (京大数解研から)

(e-mail address : yg@whale.ryukoku.ac.jp)

亀山 敦 氏 : 1992/04

大阪大学基礎工学部数理教室に就職 (京大理学部数学教室から)

木坂 正史 氏 : 1992/04

大阪府立大学総合科学部数理科学講座に就職 (京大理学部数学教室から)

## 学会・シンポジウム情報 (国内)

1次元力学系研究集会ーリノーマライゼーションを中心としてー

1992年5月19日ー5月24日 中津川研修センター

世話人 : 笹野 一洋 (富山医科薬科大学)

力学系研究集会

1993年1月6日ー1月9日 または 1月8日ー1月11日

(11月頃に日時・会場が決まります)

世話人 : 倉田雅弘 (名古屋工業大学)

International conference on dynamical systems and chaos  
1994年523日 - 5月27日 東京都立大学  
詳細未定

学会・シンポジウム情報 (国外)

(\* の付いているものについては、巻末に資料が添付されています )

Complex Analytic Methods in Dynamical Systems \*  
1992.1.22-30  
IMPA, Rio de Janeiro, Brazil

Nielsen Theory and Dynamical Systems \*  
Joint Summer Research Conference  
1992.6.20-26  
Organizer: John Franks

Regional Institute in Dynamical Systems \*  
1992.7.6-10 Strange Attractors and Knots  
1992.7.12-16 Dynamics of Annulus Maps  
1992.7.19-23 Complexity and Computability over the Reals  
1992.7.26-30 Dynamics, Competition, and Neural Networks  
Boston University  
e-mail : dyn-inst@math.bu.edu

Bifurcations et orbites périodiques des champs de vecteurs \*  
1992.7.13-24  
Invited speakers: Camacho, Dumortier, Rousarie, Il'yashenko, Écalle, Guckenheimer,  
Shlomiuk, Rousseau etc.  
Organizer: Dana Schlomiuk, Département de Mathématiques et de Statistique, Faculté des Arts  
et des Sciences, Université de Montréal, C.P. 6128, succursale A, Montréal, Quebec H3C 3J7,  
Canada

プレプリント情報

Brown, R.F. and Greene, R.E., An interior fixed point property of the disk. [松岡]  
Brown, R.F. and Sanderson, B.J., Fixed points of boundary-preserving maps of surfaces. [松岡]  
Davis, M.J., MacKay, R.S., Sannami, A., Markov shifts in the Hénon family. [三波]  
de Mero, W. and van Strien S. J., One-dimensional dynamics. [三波]  
Flexor, M., Théorème du secteur d'après D. Sullivan. [三波]  
Lanford, O., Feigenbaum Analysis in  $C^r$  (Preliminary version). [國府]  
Larsson, P., The difference set of two Cantor sets. [三波]

- Marzantowicz, W., The Lefschetz number of iteration and periodic points of smooth mappings. [松岡]
- Miang-liang Pei, Mather set for finite-twist maps of a cylinder and semilinear Duffing equations. [白岩]
- Miang-liang Pei, Mather sets for superlinear Duffing equations. [白岩]
- Schlomiuk, D., Algebraic integrals of quadratic systems with a weak focus. [白岩]
- Schlomiuk, D., Algebraic particular integrals, integrability and the problem of the center. [白岩]
- Sullivan, D., Bounds, quadratic differentials, and renormalization conjectures. [三波]
- Watanabe, N., On knotted preimages of submersions. [渡辺]
- Xiao Dongmei, Versal deformations of saddle singularity of codimension 3 of a planar vector field. [白岩]

所有者

- 三波 ..... 三波 篤郎 (北海道大学理学部数学教室)
- 松岡 ..... 松岡 隆 (鳴門教育大学数学教室)
- 渡辺 ..... 渡辺 展也 (日本大学生産工学部)
- 國府 ..... 國府 寛司 (京都大学理学部数学教室)
- 白岩 ..... 白岩 謙一 (名古屋大学教養部数学教室)

Jan. 22-30, 1992, IMPA, Rio de Janeiro, Brazil.

COMPLEX ANALYTIC METHODS IN DYNAMICAL SYSTEMS

SCHEDULE OF CONFERENCES

WEDNESDAY - 22		
TIME	LECTURER	TITLE
11:00 to 12:00	GHYS, Etienne (E.N.S. LYON)	HOLOMORPHIC ANOSOV DIFFEOMORPHISMS
14:00 to 15:00	PEREZ-MARCO, Ricardo (Univ. Paris-Sud - Orsay)	GERMS OF DIFFEOMORPHISMS OF $(\mathbb{C}, 0)$ VERSUS ANALYTIC DIFFEOMORPHISMS OF THE CIRCLE
C O F F E E                      B R E A K		
15:30 to 16:30	MOUSSU, Robert (Univ. Bourgogne)	COHOMOLOGIE RELATIVE POUR LES FEUILLETAGES D'APRES BERTHIER - CERVEAU

THURSDAY - 23		
09:30 to 10:30	LANGEVIN, Remi (Univ. Bourgogne)	STRATEGY TO CATCH THE LINEAR HOLONOMY OF AN HOLOMORPHIC FOLIATION
11:00 to 12:00	LEHMANN, Daniel (Univ. Montpellier)	RESIDUES OF MANIFOLDS INVARIANTS BY AN HOLOMORPHIC VECTOR FIELD
14:00 to 15:00	FRANKEL, Sidney (Univ. Nantes and Columbia University)	ON THE EXISTENCE QUESTION FOR HOLOMORPHIC LAMINATIONS IN $\mathbb{C}P^2$
C O F F E E                      B R E A K		
16:30 to 17:30	ECALLE, Jean (Univ. Paris-Sud Orsay)	HOW MUCH OF RESONANCE THEORY CARRIES OVER TO THE QUASIRESONNANT CASE
18:00	C O C K T A I L	

COMPLEX ANALYTIC METHODS IN DYNAMICAL SYSTEMS

SCHEDULE OF CONFERENCES

FRIDAY - 24		
09:30 to 10:30	KOSTOV, Vladimir (Univ. Utrecht)	FUCHSIAN LINEAR SYSTEMS ON RIEMANN'S SPHERE AND THE RIEMANN- HILBERT PROBLEM
11:00 to 12:00	ROCHE, Claude (Univ. Bourgogne)	ENSEMBLES PFAFFIENS
14:00 to 15:00	RAMIS, Jean Pierre (Univ. Louis Pasteur)	GEVREY ESTIMATES FOR SOLUTIONS OF DIFFERENTIAL EQUATIONS. APPLICATIONS TO SOME SINGULAR PERTURBATIONS PROBLEMS
C O F F E E		B R E A K
15:30 to 16:30	GOMEZ-MONT, Xavier (C I M A T)	THE INDEX OF HOLOMORPHIC FLOWS ON SINGULAR SURFACES

MONDAY - 27		
09:30 to 10:30	SALUDES, Jordi (U N A M)	TEICHMULLER SPACES FOR TRANSVERSELY HOLOMORPHIC FOLIATIONS
11:00 to 12:00	ROSENBERG, Harold (Univ. Paris VII)	THE GEOMETRY AND CONFORMAL TYPE OF PROPERLY EMBEDDED MINIMAL SURFACES I N $R^3$
14:00 to 15:00	ROUSSARIE, Robert (Univ. Bourgogne)	UNFOLDINGS OF ANALYTIC HYPERBOLIC POLYCYCLES
C O F F E E		B R E A K
16:30 to 17:30	IL'YASHENKO, Ju (Moscow St. Univ)	NORMAL FORMS FOR LOCAL FAMILIES AND NONLOCAL BIFURCATIONS

COMPLEX ANALYTIC METHODS IN DYNAMICAL SYSTEMS

SCHEDULE OF CONFERENCES

TUESDAY - 28		
09:30 to 10:30	TISCHLER, David (Queens College)	PERTURBATIONS OF A CRITICAL FIXED POINT FOR AN ANALYTIC MAP
11:00 to 12:00	NICOLAU, Marcel (Univ. Aut. Barcelona)	COMPLEX STRUCTURES ON PRODUCTS OF SPHERES
14:00 to 15:00	AROCA, J.M. (Univ. Valladolid)	ABOUT THE GEVREY SERIES IN SEVERAL VARIABLES
C O F F E E		B R E A K
15:30 to 16:30	MATTEI, Jean François (Univ. Toulouse)	REALISATIONS GLOBALES DES TYPES ANALYTIQUES LOCAUX D'UN DEPLOIEMENT D'UN FEUILLETAGE HOLOMORPHE DE $\mathbb{C}^2$

WEDNESDAY - 29		
09:30 to 10:30	CANO, José (Univ. Valladolid)	ABOUT GEVREY CHARACTER OF SOLUTIONS OF FORMAL DIFFERENTIAL EQUATIONS OF GEVREY TYPE
11:00 to 12:00	SEADE, José (Inst. Tec. Aut. Mex.)	THE INDEX OF A VECTOR FIELD ON A SINGULAR SPACE
14:00 to 15:00	SIBONY, Nessim (Univ. Paris-Sud)	HOLOMORPHIC DYNAMICS IN $\mathbb{P}^2$
C O F F E E		B R E A K
15:30 to 16:30	YOCCOZ, J.C. (Univ. Paris-Sud)	HOLONOMY OF GERMS OF HOLOMORPHIC FOLIATIONS IN $\mathbb{C}^2$

COMPLEX ANALYTIC METHODS IN DYNAMICAL SYSTEMS

SCHEDULE OF CONFERENCES

THURSDAY, 30		
11:00 to 12:00	NAKAI, Isao (Hokkaido Univ.)	ORBITS OF GROUPS OF DIFFEOMORPHISMS ACTING ON $(\mathbb{C}, 0)$ AND $(\mathbb{R}, 0)$
14:00 TO 15:00	VERJOVSKY, Alberto (I C T P)	RIGIDITY OF LOCALLY FREE ACTIONS OF THE COMPLEX AFFINE GROUP
C O F F E E		B R E A K
15:30 to 16:30	CANO, Felipe (Univ. Valladolid)	REDUCTION OF THE SINGULARITIES OF HOLOMORPHIC FOLIATIONS

追加

THURSDAY 30 9:30 - 10:30

Mitsuhiko SHISHIKURA, THE BOUNDARY OF THE  
MADELBROT SET HAS HAUSDORFF DIMENSION  
TWO.

Nielsen Theory and Dynamical Systems  
 1992 Joint Summer Research Conference  
 Supported by the National Science Foundation  
 June 20 to June 26

## SCHEDULE OF TALKS

### Sunday

9:00 - 10:00 Robert Brown  
 10:30 - 11:30 John Franks  
 1:30 - 2:30 Jane Gilman  
 3:00 - 4:00 Ross Geoghegan

### Monday

9:00 - 10:00 Michal Misiurewicz  
 10:30 - 11:30 Boju Jiang  
 1:30 - 2:30 Michael Handel  
 2:45 - 5:30 Contributed Talks (See attached schedule)

### Tuesday

9:00 - 10:00 Helga Schirmer  
 10:30 - 11:30 Takashi Matsuoka  
 1:00 - ? Free Time (organized outing ?)

### Wednesday

9:00 - 10:00 Philip Boyland  
 10:30 - 11:30 Philip Heath  
 1:30 - 2:30 Konstantin Mischaikow  
 3:00 - 4:00 Anatole Katok

### Thursday

9:00 - 10:00 Christopher McCord  
 10:30 - 11:30 David Fried  
 1:30 - 2:30 Joan Birman  
 3:00 - 4:00 Open Problems in Dynamical Systems & Nielsen Theory

### Schedule of Contributed Talks for Monday Afternoon

	Session A	Session B	Session C
2:45 - 3:15	Richard Holmgren	Jaume Llibre	Evelyn Hart
3:30 - 4:00	Jim Denvir	Alexander Fel'shtyn	Aaron Schusteff
4:15 - 4:45	Fernanda Botelho	Josefina Casasayanas & Ana Nunes	Peter Wong
5:00 - 5:30	Dalin Tang	Juan Tolosa	Edward Keppelmann



Boston University

Department of Mathematics

REGIONAL INSTITUTE  
IN  
DYNAMICAL SYSTEMS

During the summer of 1992, the Department of Mathematics at Boston University will continue to organize a Regional Institute in Dynamical Systems (RIDS). Funded by the National Science Foundation as part of its Regional Geometry Institutes Initiative, RIDS will combine both advanced research and creative educational components. The basic purpose of the Institute will be to gather together researchers, college and secondary teachers, graduate students, and even high school students to study a wide range of topics in dynamics.

The main part of the Institute consists of a series of week-long conferences on special topics in the geometric theory of dynamical systems. Each conference will feature a principal speaker or group of speakers who will deliver a series of lectures on their specialties. The lectures will be aimed at graduate students and college instructors. The goal is to bring participants to the forefront of current research in various areas of dynamics. The pace of the lectures will be flexible, allowing participants time to assimilate new knowledge and to contemplate uses of their new tools in their own specialties.

The four conferences scheduled in the summer of 1992 are:

*Conference 1.* July 6-10, 1992. Strange Attractors and Knots. Principal Lecturers: Philip Holmes, Cornell University, and Robert F. Williams, University of Texas.

*Conference 2.* July 12-16, 1992. Dynamics of Annulus Maps. Principal Lecturers: John Franks, Northwestern University, and G. R. Hall, Boston University.

*Conference 3.* July 19-23, 1992. Complexity and Computability over the Reals. Principal Lecturers: Lenore Blum, ICSI and Mills College, Michael Shub, IBM Thomas J. Watson Laboratory, and Stephen Smale, University of California, Berkeley.

*Conference 4.* July 26-30, 1992. Dynamics, Competition, and Neural Networks. Principal Lecturer: Morris Hirsch, University of California, Berkeley.

問合せは Email : DYN-INST@MATH.BU.EDU

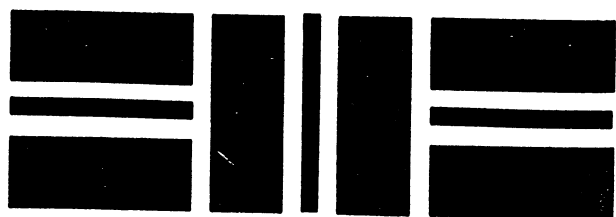
Regional Institute in Dynamics  
Department of Mathematics  
Boston University  
111 Cummington St.  
Boston

*Prière d'afficher*

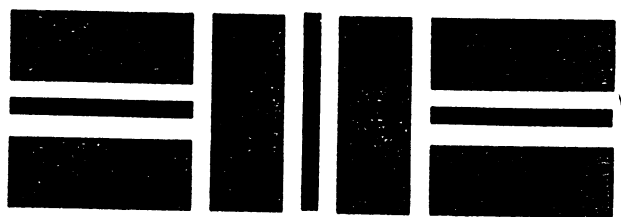
**séminaire de  
mathématiques  
supérieures**

**31<sup>e</sup>  
session**

**séminaire scientifique OTAN**



**Bifurcations  
et orbites périodiques  
des champs de vecteurs**



**13 - 24 juillet 1992**

**université de montréal  
département de mathématiques  
et de statistique**

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**CONFÉRENCIERS:**

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**C. Camacho**, IMPA, Rio de Janeiro:  
Feuilletages complexes provenant  
d'équations différentielles polynomiales.

**F. Dumortier**, Limburgs Universitair  
Centrum &

**R. Roussarie**, Université de Bourgogne:  
Techniques dans la théorie des bifurcations  
locales.

**J. Écalle**, Université de Paris-Sud:  
Une preuve constructive de la conjecture  
de Dulac par sommation de l'application de  
retour.

**J. Guckenheimer**, Cornell University:  
Bifurcations et applications: études calcula-  
toires de systèmes dynamiques.

**P.J. Holmes**, Cornell University:  
Noeuds et généalogies d'orbites en trois  
dimensions.

**Y. Il'yashenko**, Université d'État de Moscou:  
Dynamique locale et bifurcations non  
locales.

**N.G. Lloyd**, University College of Wales,  
Aberystwith:  
Bifurcations de cycles limites dans les  
systèmes polynomiaux.

**R. Moussu**, Université de Bourgogne:  
Singularités des équations différentielles  
holomorphes en dimension 2.

**J.-P. Ramis**, Université Louis Pasteur,  
Strasbourg:  
Séries divergentes et systèmes dynamiques  
holomorphes.

**C. Rousseau**, Université de Montréal:  
Méthodes de bifurcation dans les systèmes  
polynomiaux.

**D. Schlomiuk**, Université de Montréal:  
Aspects algébriques et géométriques de la  
théorie des champs de vecteurs  
polynomiaux.

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**LECTURERS:**

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**C. Camacho**, IMPA, Rio de Janeiro:  
Complex Foliations Arising from Polynomial  
Differential Equations.

**F. Dumortier**, Limburgs Universitair  
Centrum &

**R. Roussarie**, Université de Bourgogne:  
Technics in the Theory of Local Bifurcations.

**J. Écalle**, Université de Paris-Sud:  
A Constructive Proof of Dulac's Conjecture  
by Resummation of the Return Map.

**J. Guckenheimer**, Cornell University:  
Bifurcations and Applications: Computa-  
tional Studies of Dynamical Systems.

**P.J. Holmes**, Cornell University:  
Knots and Orbit Genealogies in Three  
Dimensions.

**Y. Il'yashenko**, Moscow State University:  
Local Dynamics and Nonlocal Bifurcations.

**N.G. Lloyd**, University College of Wales,  
Aberystwith:  
Bifurcation of Limit Cycles in Polynomial  
Systems.

**R. Moussu**, Université de Bourgogne:  
Singularities of Holomorphic Differential  
Equations in Dimension 2.

**J.-P. Ramis**, Université Louis Pasteur,  
Strasbourg:  
Divergent Series and Holomorphic  
Dynamical Systems.

**C. Rousseau**, Université de Montréal:  
Bifurcation Methods in Polynomial Systems.

**D. Schlomiuk**, Université de Montréal:  
Algebraic and Geometric Aspects of the  
Theory of Polynomial Vector Fields.

This Seminar is being held with financial support from the North Atlantic Treaty Organization, the Natural Sciences and Engineering Research Council of Canada, and the Université de Montréal.

The number of participants is limited to 100. Participation of doctoral students and postdoctoral fellows is particularly encouraged.

Partial financial assistance will be available for a certain number of participants. Priority will be given to graduate students. Requests for participation or financial assistance must be received before March 6, 1992.

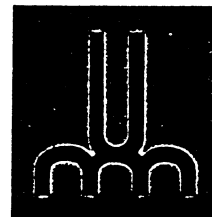
Single rooms (with hall bath) are available at the Résidences of the Université de Montréal. Room rates are 90\$ CA per week.

There is no registration fee. A contribution of 50\$ CA is required for social affairs.

A. Daigneault of the Université de Montréal is Director of the ASI; D. Schlomiuk is its scientific organizer.

Please send the attached request for participation form as well as any correspondence to:

Ghislaine DAVID, secrétaire  
Séminaire de Mathématiques  
Supérieures  
Université de Montréal  
Case postale 6128, succ. "A"  
Montréal (Qué.), Canada  
H3C 3J7  
Tel.: (514) 343-6710  
Fax: (514) 343-5700



u n i v e r s i t é   d e   m o n t r é a l

Ce Séminaire est subventionné par l'Organisation du Traité de l'Atlantique Nord, le Conseil de recherches en sciences naturelles et en génie du Canada et l'Université de Montréal.

Le nombre de participants est limité à 100. Les étudiants au doctorat et chercheurs postdoctorats sont particulièrement encouragés à y participer.

Une aide financière partielle est prévue pour un certain nombre de participants. Priorité sera accordée aux demandes de la part d'étudiants. Toute demande de participation ou d'aide financière doit être reçue avant le 6 mars 1992.

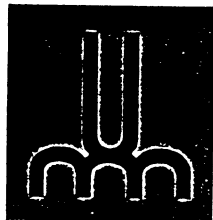
Des chambres (salle de bain à l'étage) pour personnes seules sont disponibles au tarif de 90\$ CA par semaine aux Résidences de l'Université de Montréal.

Il n'y a aucuns frais d'inscription. Une contribution de 50\$ CA est exigée pour les affaires sociales.

A. Daigneault de l'Université de Montréal est directeur du Séminaire; D. Schlomiuk en est l'organisatrice scientifique.

Retourner la demande de participation ci-jointe et adresser toute correspondance à:

Ghislaine DAVID, secrétaire  
Séminaire de Mathématiques  
Supérieures  
Université de Montréal  
Case postale 6128, succ. «A»  
Montréal (Qué.), Canada  
H3C 3J7  
Tél.: (514) 343-6710  
Fax: (514) 343-5700



u n i v e r s i t é   d e   m o n t r é a l

séminaire de mathématiques supérieures  
séminaire scientifique OTAN

## Bifurcations et orbites périodiques des champs de vecteurs

13 - 24 juillet 1992

1. NOM \_\_\_\_\_
2. PRÉNOM \_\_\_\_\_ 3. SEXE: MASC.  FÉM.
4. DATE DE NAISSANCE \_\_\_\_\_
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8. TÉLÉPHONE (DOMICILE) \_\_\_\_\_
9. TÉLÉCOPIEUR (FAX) \_\_\_\_\_
10. E-MAIL \_\_\_\_\_
11. INSTITUTION À LAQUELLE VOUS ÊTES ATTACHÉ(E) \_\_\_\_\_  
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12. TITRE OU FONCTION \_\_\_\_\_
13. DOMAINE DE SPÉCIALISATION \_\_\_\_\_  
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14. DÉSIREZ-VOUS UNE CHAMBRE AUX RÉSIDENCES? \_\_\_\_\_  
(OCCUPATION SIMPLE SEULEMENT)
15. SI NON, VEUILLEZ NOUS ÉCRIRE À CE SUJET.  
\_\_\_\_\_
16. UNE AIDE FINANCIÈRE VOUS EST-ELLE NÉCESSAIRE?  
SÉJOUR (OUI OU NON) \_\_\_\_\_  
VOYAGE (SOMME DEMANDÉE) \_\_\_\_\_

17. DERNIER DIPLÔME OBTENU \_\_\_\_\_

SPÉCIALITÉ \_\_\_\_\_

ANNÉE \_\_\_\_\_

INSTITUTION \_\_\_\_\_

18. SI VOUS ÊTES ÉTUDIANT(E), NOM DE VOTRE DIRECTEUR DE RECHERCHE \_\_\_\_\_

19. PUBLICATIONS RÉCENTES  
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LIEU ET DATE \_\_\_\_\_

SIGNATURE \_\_\_\_\_

Date limite de réception: 6 mars 1992

Adresser toute correspondance à:

GHISLAINE DAVID, SECRÉTAIRE  
SÉMINAIRE DE MATHÉMATIQUES SUPÉRIEURES  
UNIVERSITÉ DE MONTRÉAL  
C. P. 6128, SUCC. «A»  
MONTRÉAL, QUÉ., CANADA  
H3C 3J7

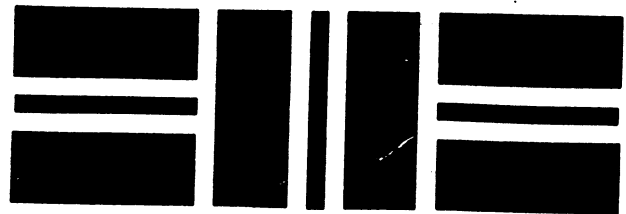
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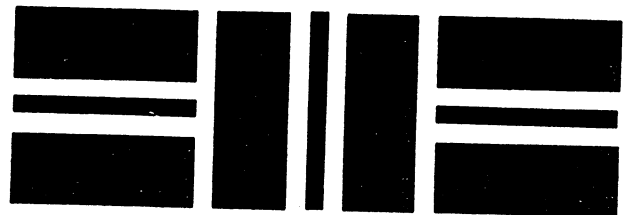
séminaire de  
mathématiques  
supérieures

31st  
session

NATO advanced study institute



**Bifurcations  
and Periodic Orbits  
of Vector Fields**



July 13 - 24, 1992

**université de montréal**  
département de mathématiques  
et de statistique

