

Astérisque

AST

Astérisque, tome 50 (1977), p. I-X
<http://www.numdam.org/item?id=AST_1977__50__R1_0>

© Société mathématique de France, 1977, tous droits réservés.

L'accès aux archives de la collection « Astérisque » ([http://smf4.emath.fr/
Publications/Asterisque/](http://smf4.emath.fr/Publications/Asterisque/)) implique l'accord avec les conditions générales d'utilisation (<http://www.numdam.org/conditions>). Toute utilisation commerciale ou impression systématique est constitutive d'une infraction pénale. Toute copie ou impression de ce fichier doit contenir la présente mention de copyright.

NUMDAM

*Article numérisé dans le cadre du programme
Numérisation de documents anciens mathématiques
<http://www.numdam.org/>*

INTRODUCTION

These three volumes (*Astérisque* 49,50,51) contain contributions to the conference on dynamical systems and ergodic theory held at Warsaw from June 27 to July 2, 1977, organized jointly by the mathematics institutes of the University of Rennes and the University of Warsaw. Funds for the conference were provided by the respective institutes, their universities and by the C.N.R.S. The organizers are indebted to these institutions for their generous support.

Ninety five specialists from 13 different countries participated in the lectures and discussions. The main purpose of such a conference is of course to establish contacts and create a favorable atmosphere for discussion among scientists with varied interests and from different countries, and we would like to thank all participants for their part in attaining this goal.

The Organizers

TABLE OF CONTENTS

PART I - Astérisque 49

BRIN M.I.	Nonwandering points of Anosov diffeomorphisms	11
DANKNER A.	On Smale's Axiom A dynamical systems	19
DENKER M.	Generators and almost topological isomorphisms	23
FATHI A.- HERMAN M.R.	Existence de difféomorphismes minimaux	37
FELDMAN J.	Ergodic theory of continuous group actions	61
FORD J.	Relevance of computer experiments to the pure mathematics of integrable and ergodic dynamical systems	75
HANCOCK S.G.	Orbits of paths under hyperbolic toral automorphisms	93
JAKUBCZYK B.- PRZTYCKI F.	On local models of K-tuples of vector fields	97
KAMAE T.	Mutual singularity of spectra of dynamical systems given by "sums of digits" to different bases	109
KAMIŃSKI B.	Spectrum of two-dimensional dynamical systems with completely positive entropy	115
KATOK A.B.	The special representation theorem for multi-dimensional group actions	117
KOMORNIKOVA M.- KOMORNIK J.	On sequential entropy of measure preserving transformation	141
KOWALSKI Z.	Ergodic properties of piecewise monotonic transformations	145

PART II - Astérisque 50

KRENGEL U.	Recent progress on ergodic theorems	151
KRIEGER W.	On topological Markov chains	193
KRYCH M.	Two remarks on structural stability of plane dynamical systems	197
KRZYŻEWSKI K.	Some results on expanding mapping	205
KWIATKOWSKI J.	On invariant measures on the space of bilateral sequences	219
KWIATKOWSKI J.- MANIAKOWSKI F.	On the transportation problem used in the definition of Ornstein's distance \bar{d}	223
LASOTA A.	Ergodic problems in biology	239
LEDRAPPIER F.	Mesures d'équilibre d'entropie complètement positive	251
MANNING A.	Toral automorphisms, topological entropy and the fundamental group	273
MARCZYŃSKA B.	On a generalization of topological conditional entropy	283
MEDVEĎ M.	On generic bifurcations of second order ordinary differential equations near closed orbits	293
MISIUREWICZ M.-SZLENK W.	Entropy of piecewise monotone mappings	299
MOULIN OLLAGNIER J.-PINCHON D.	A note about Hedlund's theorem	311
NADZIEJA T.	A remark on vector fields on open manifolds	315

PART III - Astérisque 51

NEWHOUSE S.E.	Topological entropy and Hausdorff dimension for area preserving diffeomorphisms of surfaces	323
PALIS J.	A differentiable invariant of topological conjugacies and moduli of stability	335

PLYKIN R.V.		
	Coexistence, geometrical and asymptotical properties of hyperbolic codimensional one attractors. Application to diffeomorphisms with infinitely many zero-dimensional attractors	347
PLYKIN R.V.-KAMAEV D.A.-ZIROV A.Ju.		
	One-dimensional attractors of A-diffeomorphisms on S^2 and diffeomorphisms with infinitely many sinks	355
SHUB M.		
	Alexander cocycles and dynamics	395
SIGMUND K.		
	Affine transformations on the space of probability measures	415
STEPIN A.M.		
	Polynomial integrals of hamiltonian systems	429
WOJTKOWSKI M.		
	Oscillating geodesics on 2-dimensional manifolds	443
ZIEMIAN K.M.		
	On topological and measure entropies of semigroups	457
ZOLADEK H.		
	On bifurcations of orientation reversing diffeomorphisms of the circle	473

LIST OF PARTICIPANTS

ANOSOV D.V.
Мат.инст.АН ССР, ул.Вавилова 42, Москва USSR

BOBIŃSKI Z.
Instytut Matematyki, Uniwersytet M.Kopernika, ul.Chopina POLAND
87 100 Toruń

BOJANOWSKA A.
Wydz.Mat. i Mech., Instytut Matematyki, Uniwersytet POLAND
Warszawski, PKiN 00-901 Warszawa

BOJARSKI B.
Wydz.Mat. i Mech., Instytut Matematyki, Uniwersytet POLAND
Warszawski, PKiN 00-901 Warszawa

BOLDRIGHINI C.
Istituto Matematico dell'Universita via Vicenza 23 ITALY
00 185 Roma

BOTHE H.G.
ZIMM, Akad.d.Wissenschaften der DDR, 108 Berlin GDR
Mohrenstrasse 39

BRIN M.I.
Научно-Исследовательский Эконом.Инст.при Госплане СССР USSR
Москва, І-й Хорошевский Проезд 3

BRUNOVSKY P.
Institute of Applied Mathematics and Computing, Comenius Univ. CZECHOSLOVAKIA
Mlynska dolina, 816 31 Bratislava

DENKER M.
Institut f.Math.Statistik, u.Wirtschaftsmathematik FRG
Univ. Göttingen, 3400 Göttingen, Lotzestrasse 13

EBERLEIN E.
Mathematik Departement, ETH-Zentrum, CH-8092 Zürich Switzerland

FELDMAN J.
Dept.of Mathematics, Univ. of California Berkeley USA
California 94720

FERRERO P.
Centre National de la Recherche Scientifique, Centre de physique FRANCE
theorique, 31 Chemin J.Aiguier, 13274 Marseille

FORD J.
School of Physics, Georgia Institute of Technology USA
Atlanta, Georgia 30 332

GRILLENBERGER Ch.
Institut f. Mathematische Statistik u. Wirtschaftsmathematik FRG
Univ. Göttingen, 3400 Göttingen, Lotzestrasse 13

GUTZWILLER M.C.
IBM, Th.J.Watson Research Center, Yorktown Heights, N.Y. 10598 USA

HANCOCK S.
Mathematics Institute, Univ. of Warwick, Coventry CV4 7AL GREAT BRITAIN

HERMAN M.
Centre de Mathématique, Ecole Polytechnique, 91128 Palaiseau FRANCE

HYB W.
Instytut Matematyczny PAN, ul. Śniadeckich 8 00-950 Warszawa POLAND

JACOBS K.
Mathematisches Institut der Universität, Bismarckstrasse 1 1/2 RFG
8520 Erlangen

JAKUBCZYK B.
Instytut Matematyczny PAN, 00-905 Warszawa, ul Śniadeckich 8 POLAND

JEŚMIANOWICZ L.
Instytut Matematyki, Uniwersytet M.Kopernika,ul.Chopina 12 POLAND
87 100 Toruń

JONKER L.B.
Math. Institute, Univ. of Warwick, Coventry CV4 7AL GREAT BRITAIN

KAMAE T.
Université de Bordeaux I, U.E.R. de Mathématiques FRANCE
33405 Talence

KAMINSKI B.
Inst.Mat., Uniwersytet M. Kopernika, ul.Chopina 12 POLAND
87 100 Toruń

KATOK A.B.
Central Econ. Math.Inst of Academy,Vavilova str.44,Moscow 117333 USSR

KEANE M.
Université de Rennes, B.P. 25A, 35031 Rennes cedex FRANCE

KOMORNÍK J.
Matematicky pavilon, Comenius University, Mlynska dolina
816 31 Bratislava CZECHOSLOVAKIA

KOMOROWSKI J.
Katedra Metod Mat.Fizyki, Wydz.Fizyki, Warszawa, ul.Hoza POLAND

KOWALSKI Z.
Instytut Matematyczny Univ.Wrocławski, pl.Grunwaldzki 1
50-377 Wrocław POLAND

KRENGET U.
Institut f.Mathematische Statistik u.Wirtschaftsmathematik
Univ. Göttingen, 3400 Göttingen; Lotzestr. 13 FRG

KRIEGER W.
Univ. Heidelberg, Inst.f.Angewandte Mathematik, 69 Heidelberg
Im Neuenheimer Feld 5 FRG

KRYCH M.
Wydz.Mat.i Mech , Instytut Matematyki, Uniwersytet
Warszawski, PKiN 00-901 Warszawa POLAND

KRZYWICKI A.
Inst.Matematyczny,Uniw.Wrocławski, pl.Grunwaldzki 1
50-377 Wrocław POLAND

KRZYŻEWSKI K.
Wydz.Mat.i Mech., Instytut Matematyki Uniw. Warszawski,
PKiN, 00-901 Warszawa POLAND

KWIATKOWSKI J.
Instytut Matematyki, Uniwersytet M. Kopernika, ul.Chopina
87 100 Toruń POLAND

LASOTA A.
Instytut Matematyki, Uniwersytet Ślaski ul.Bankowa 14
40-007 Katowice POLAND

LEDRAPPIER F.
Laboratoire de Probabilités, Université Paris VI, Tour 56
4 Pl.Jussieu, 75 230 Paris Cedex 05 FRANCE

MANNING A.
Mathematics Institute , Univ. Warwick, Coventry CV4 7AL GREAT BRITAIN

MARCHETTI F.
Istituto Matematico dell'Universita via Vicenza 23 00-185 Roma ITALY

MARCZYNSKA B.
Wydz.Mat.i Mech., Inst.Mat. Uniwersytet Warszawski POLAND
PKiN 00-901 Warszawa

MEDVEĎ M.
Matematický ustav SAV, ul.Abrancov Mieru 49 CZECHOSLOVAKIA
886 25 Bratislava

MISIUREWICZ M.
Wydz.Mat.i Mech., Instytut Matematyki, Uniwersytet POLAND
Warszawski, PKiN, 00-901 Warszawa

MOSTOWSKI T.
Wydz.Mat.i Mech., Instytut Matematyki, Uniwersytet POLAND
Warszawski, PKiN, 00-901 Warszawa

MOULIN-OLLAGNIER J.
Département de Mathématiques, Univ.Paris-Nord, FRANCE
Avenue J.B. Clement, 93 430 Villetaneuse

NADZIEJA T.
Instytut Matematyczny, Uniw. Wrocławski, Pl. Grunwaldzki 1 POLAND
50-377 Wrocław

NEWHOUSE S.
Dept. of Mathematics, University of North Carolina USA
Chapel Hill, N.C. 27514

NITECKI Z.
Department of Mathematics, Tufts University, Medford, Mass. 02155 USA

NOWIŃSKI K.
Wydz.Mat.i Mech., Inst. Math, Uniwersytet Warszawski POLAND
PKiN 00 901 Warszawa

OLECH Cz.
Instytut Matematyczny PAN, ul. Śniadeckich 8 Warszawa POLAND

OMBACH J.
Instytut Matematyki, Uniw. Jagielloński, ul.Reymonta 4 Krakow POLAND

ORNSTEIN D.S.
Department of Mathematics, Stanford University, Stanford Cal. USA
94 305

PALIS J. Jr.
Instituto de Matemática Pura e Aplicada. Rua Luiz de Camoes 68, BRASIL
Rio de Janerio

PARRY W.
Math. Institute, University of Warwick, Coventry CV4 7AL GREAT BRITAIN

PINCHON D.
62 rue Ed.Vallant, 94140 Alfortville FRANCE

PRZTYCKI F.
Instytut Matematyczny PAN, ul. Śniadeckich 8, Warszawa POLAND

PUGH C.
Department of Mathematics, Univ. of California, USA
Berkeley, Cal. 94720

RYLL-NARDZEWSKI Cz.
Instytut Matematyczny, Uniwersytet Wrocławski, pl. Grunwaldzki 1 POLAND
50-377 Wrocław

SASIADA E.
Instytut Mat., Uniwersytet M. Kopernika, ul.Chopina 12/18 POLAND
87100 Toruń

SCHMIDT K.
Mathematics Institute, Univ. of Warwick, Coventry CV4 7AL GREAT BRITAIN

SHUB M.
Department of Math., Queens College, Flushing USA
New York, N.Y. 11367

SIGMUND K.
Mathematisches Institut, Univ. Wien, A-1090 Wien, AUSTRIA
Strudlhofgasse 4

STEPIN A.M.
MTV, kat. Mex-Mat., II7 234 MOCKBA USSR

SZLENK W.
Wydz.Mat.i Mech., Instytut Matematyki, Uniwersytet POLAND
Warszawski, PKiN, 00-901 Warszawa

THOUVENOT J.P.
Laboratoire de Probabilités, Université Paris VI, Tour 56 FRANCE
4 Place Jussieu, 75230 Paris cedex 05

TRIOLO L.
Istituto Matematico dell'Universita via Vicenza 23 ITALY
00-185 Roma

VERJOVSKY A.
Centro de Investigacion y Estudios Avanzados de I.P.N. MEXICO
Departamento de Matematicas, Apartado Postal 140740
Mexico 14 D.F.

VUL E.B.
Москва II7 333, ул.Вавилова 44 корп.4,кв.140 USSR

WALTERS P.
Mathematics Institute, Univ of Warwick, Coventry CV4 7AL GREAT BRITAIN

WILLIAMS R.F.
Department of Mathematics, Northwestern University USA
Evanston, Ill. 60201

WILKINSON K.M.
Mathematics Department, Nottingham Univ., University Park GREAT BRITAIN
Nottingham NG7 2RD

WÓJTKOWSKI M.
Wydz.Mat.i Mech., Instytut Matematyki, Uniwersytet Warszawski, POLAND
PKiN, 00-901 Warszawa

ZIEMIAN K.
Wydz.Mat.i Mech., Instytut Matematyki, Uniwersytet Warszawski, POLAND
PKiN, 00-901 Warszawa

ŻOŁĄDEK H.
Wydz.Mat.i Mech., Instytut Matematyki, Uniwersytet Warszawski, POLAND
PKiN, 00-901 Warszawa