

力学系通信

NO. 22 (1994/07)

力学系通信 NO.22 をお送りします。毎号同じ事を書くのは恐縮なのですが、プレプリントやシンポジウム情報を私宛お送り下さるようお願い申し上げます。

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異動

高橋 智氏.....大阪大学・理学部・数学教室へ異動

西沢 清子氏.....城西大学・理学部・数学教室へ異動

野尻 朝子氏.....白百合学園中学・高等学校へ就職

盛田 健彦氏.....東京工業大学・理学部・数学教室へ異動

力学系勉強会について

毎年開催されております「力学系勉強会」ですが、本年度は愛媛大学・平出耕一氏を世話人として開催されます。平出氏から次のような案内を頂きましたので、掲載します。

今年度の力学系の勉強会を次のように開催します。

名称：量子カオスと正則ベクトル場の定性的研究

日時：10月1日(土) -- 5日(水) (1994年度秋期学会(東工大)の直後)

場所：東京都立大学会津田島寮(福島県南会津郡田島町)

目的：参加者全員が量子カオスと正則ベクトル場についての現在までの発展に関する包括的な知識と本質的な部分の理解を得ることが出来るようにする。

次の方々に講演をお願いしてあります。

量子カオス： 足立聡氏(東工大)、平田雅樹氏(都立大)、

白井朋之氏 (東大数理)、盛田建彦氏 (東工大)
正則ベクトル場: 伊藤敏和氏 (龍谷大)、岡伸篤氏 (名大)、中居功氏 (北大)

東京都立大学津田島寮の宿泊は人数に制限 (35人位) がありますので、車を利用できる方はJR田島駅近辺のビジネスホテル (会場から車で20分位) をご利用ください。田島寮の宿泊の斡旋は、講演者の方々と学生の方を優先して行います。

この勉強会に参加ご希望の方は下記住所にご連絡下さい。詳しい資料等をお送りします。

参加申込先: 790 松山市文京町2-5
愛媛大学理学部数学教室
平出耕一
e-mail address: hiraide@dpc.ehime-u.ac.jp

学会・シンポジウム情報 (国外)

Dynamical systems and related topics workshop
1994/10/13 - 16 at Penn State University
Contact: DynSystems@math.psu.edu
Organizer: A. Katok [katok_a@math.psu.edu]
H. Weiss [weiss@math.psu.edu]

学会・シンポジウム報告

Points paraboliques

1994/04/25 - 29, CIRM - Luminy [巻末資料1参照]

International conference on dynamical systems and chaos - Tokyo 1994

1994/05/23 - 05/27, Tokyo Metropolitan University [巻末資料2参照]

International workshop: Dynamics of vector fields

1994/05/30 - 06/03, Kyoto University [巻末資料3参照]

ICM 94 の力学系関係の講演リスト

ICM 94 のプログラムから力学系関係と思われる講演を適当に抜粋してみました。ご参考までに。

- M. Ratner, Interactions between ergodic theory, Lie groups and number theory.
- J. C. Yoccoz, Hyperbolicity and quasiperiodicity.
- M. Shishikura, Topological, geometric and complex analytical properties of Julia sets.
- H. Masur, Teichmüller space, dynamics, probability.
- F. Ledrappier, Applications of dynamics to compact manifolds of negative curvature.
- M. Lyubich, Geometry of quadratic polynomials.
- M. Vianna, Homoclinic bifurcations and persistent non-uniformly hyperbolic attractors.
- L.-S. Young, Ergodic theory of attractors.
- R. Mañé, Ergodic variational methods: New techniques and new problems.
- J. Franks, Rotation vectors for surface diffeomorphisms

プレプリント情報

([] 内は、所有者 (敬称略))

[笹野 一洋 (富山医科薬科大学数学教室)]

Dawson, S.P., Galeeva, R., Milnor, J., and Tresser, C., A monotonicity conjecture for real cubic maps.

Franks, J., Rotation vectors and fixed points of area preserving surface diffeomorphisms.

Handel, M., Zero entropy surface diffeomorphisms.

Handel, M., A fixed point theorem for planar homeomorphisms.

Williams, R.F., Pisot-Vijayaraghavan numbers and positive matrices.

[松岡 隆 (鳴戸教育大学数学教室)]

Matsuoka, T., Braid type and torsion number for fixed points of orientation-preserving embeddings on the disk.

Matsuoka, T., Braid type of the fixed point set for orientation-preserving embeddings on the disk.

DIFFERENTIAL GEOMETRY E-PRINTS について

Differential Geometry と Global Analysis に関する表記のシステムが MSRI において稼働を始めました。興味のある方は、dg-ga@msri.org に Subject を help として e-mail してみてください。また、WorldWideWeb によるアクセスが、

<http://msri.org/preprints/archive.html>

で可能です。また、mailing-list に参加することにより、submit された全ての論文のアブストラクトを e-mail で受け取ることができます。

なお、このサイト以外にも、下記のようなサイトが同じプログラムを使って運用されているそうです。

alg-geom@publications.math.duke.edu	(algebraic geometry)
astro-ph@babbage.sissa.it	(astrophysics)
cond-mat@babbage.sissa.it	(condensed matter)
e-mail@xxx.lanl.gov	(e-mail address database)
funct-an@babbage.sissa.it	(functional analysis)
gr-qc@xxx.lanl.gov	(general relativity / quantum cosmology)
hep-lat@ftp.scri.fsu.edu	(computational and lattice physics)
hep-ph@xxx.lanl.gov	(high energy physics phenomenological)
hep-th@xxx.lanl.gov	(high energy physics formal)
hep-ex@xxx.lanl.gov	(high energy physics experimental)
nucl-th@xxx.lanl.gov	(nuclear theory)
nlin-sys@xyz.lanl.gov	(non-linear systems)

プレプリントの ftp システムについて (続)

日本国内における力学系関係のプレプリントを集めたサービスについて、東京大学・行木氏と龍谷大学・山岸氏より「検討してみる」とのリプライを頂きました。しかしながら、どちらも難しい問題を抱えているようです。私としては、ある程度安定したシステムにしたいと考えているのですが、これを満たすシステムはなかなか構築できないのが現状のようです。「暫定的でもよいから、早く始めるべきだ」等、いろいろなご意見をお持ちの方も多いと思います。わたくし宛に、皆さんの色々なご意見をお寄せくださいます様、お願い申し上げます。

POINTS PARABOLIQUES

25 - 29 AVRIL 1994

CIRM - LUMINY

Lundi 25 Avril

- 9h 00 - A. Douady *cours de base* : Propriétés de continuité de $f \rightarrow J(f)$ et $f \rightarrow K(f)$.
 10h 00 - M. Baker *Cours de base* : groupes kleinien 2 : Géométrie des groupes kleinien.
 16h 00 - L. Keen : *Dynamics of $Z \rightarrow \lambda \text{fg } Z$*
 17h 30 - S. Bullett : *Circle packings, Kleinian groups and correspondences*.
 A. Epstein : *L'accouplement est discontinu*.

Mardi 26 Avril

- 9h 00 - A. Douady *cours de base* : Implosion parabolique.
 10h 00 - M. Baker *cours de base* : groupes kleinien 2 : L'ensemble limite d'un groupe kleinien.
 16h 00 - C. Petersen : *Le batteur à oeufs*.
 17h 30 - Y. Ishii : *Towards the kneading Theory for Lozi Attractors*.
 X. Buff : *Prolongement d'homéomorphismes entre compacts*.
 T. Bousch : *Automorphismes de $C^2 - K^+$* .

Mercredi 27 Avril

- 9h 00 - H. Jellouli : *Estimations de modules d'anneaux*.
 10h 30 : L. Keen *cours de base* : groupes kleinien 3 : An introduction to combination theorems.
 16h 00 - F. Paulin *cours de base* : groupes kleinien 4: Sous-groupes paraboliques des groupes Kleinien.
 17h 30 - C. Penrose : *Limit sets of correspondances*.
 N. Fagella, B. Branner : *Homeomorphisms between limbs of the Mandelbrot set*.

Jeudi 28 Avril

- 9h 00 - F. Paulin : *Déformations quasi-conformes de groupes kleinien*.
 10h 30 - E. Lau : *Internal addresses in the Mandelbrot set (and top prof of irreducibility of (c, z) (z periodic of period for Z^2 ec))*.
 16h 00 - D. Sorensen : *Producing non locally connected connected quadratic Julia sets*.
 17h 30 - P. Haïssinsky : *Deployment au voisinage d'un point parabolique*.
 D. Schleicher : *On multicorns unicorns parameter spaces of antiholomorphic polynomials*.
 S. Nakane : *Non-local connectivity of the Multicorn*.

Vendredi 29 Avril

- 9h 00 - F. Paulin : *Explosions de paraboliques dans les groupes kleinien*.
 10h 30 - G. Levin : *Extracting Feigenbaum paths in disconnected Julia sets*.
 14h 00 - P. Roesch : *La connexité de l'ensemble de Julia et point fixé (Shishikura)*.
 15h 00 - L. Tan : *Construire des fractions rationnelles à partir de $Z^2 - 1$* .

ICDC 94 PROGRAM

これは、ICDC 94 において実際に行われた講演のリストです。なお、Mather の講演のタイトルがはつきりしませんので、空欄になっています。

PLENARY LECTURES.

- Palis, Jacob: Brazil: Homoclinic bifurcations and strange attractors.
 Kawasaki, Kyoz: Japan: Nonlinear dynamics of two-dimensional foams.
 Ruelle, David Pierre: France: Zeta functions for maps of the interval.
 Grebogi, Celso: USA: Shadowing in chaotic systems.
 Shiraiwa, Kenichi (白岩 謙一): Japan: Recent development of dynamical systems in Japan.
 Prigogine, Ilya: USA: Chaos and the formulation of classical and quantum dynamics.
 Milnor, John: USA: The monotonicity problem for real cubic maps.
 Mackay, R.: U.K.: Discrete breathers: self localized oscillations in Hamiltonian networks.
 Keating, J.P.: U.K.: Asymptotics of semiclassical zeta-functions.
 Mather, J.: USA:
- CHAOS AND ITS BEYOND.**
 Takahashi, Y. (高橋 陽一郎): Japan: Metrical entropy and large deviation.
 Takens, F.: Netherlands: Some remarks on the analyses of chaotic or non-linear time series.
 Yorke, J.A.: USA: Control of chaos.

MONDAY, 23 May.

• Hyperbolicity and Bifurcation (I).

Invited Talk.

Ding, Tongren: P. R. China: Non-existence theorem for homoclinic points of planar diffeomorphisms and its applications.

Short Communication.

Anashkin, Oleg: Ukraine: Stability and bifurcation analysis by generalized Lyapunov functions.
 Nii, Shunsaku (新居 俊作): Japan: N -homoclinic bifurcations for homoclinic orbits.

• Ergodic Theory and Related Topics (I).

Invited Talk.

Ledrappier, Françoise: France: Multifractal formalism for stationary measures.
 Morita, Takahiko (森田 徳彦): Japan: Twisted transfer operators and Selberg zeta functions associated with cofinite Fuchsian groups.

Keane, M.: Netherlands: Random walk isomorphisms.
 Heyer, H.: Germany: Algebraic-topological methods in the dynamics of convolution families.

Hirata, M. (平田 雅樹): Japan: Poisson law for the dynamical systems with "self-mixing" condition.

Short Communication.

Chung, Y. M. (鄭 容武): Japan: The largeness of sets of points with non-dense orbit in basic sets on surfaces.

TUESDAY, 24 May.

• Hyperbolicity and Bifurcation (II).

Invited Talk.

Luo, Dingjun: P. R. China: Limit cycle bifurcations in quadratic systems with a saddle and 3 antisaddles.

Zhang, Zhi-fen: P. R. China: On the number of limit cycles of quadratic Hamiltonian systems under quadratic perturbations.

Short Communication.

Moriyasu, K. (宇安 一幹): Japan: Axiom A and stability for differentiable maps.

Oka, M. (岡 正俊): Japan: Pseudo orbit tracing property and strong transversality.

Kurata, Masahiro (倉田 雅弘): Japan: Symbolic dynamics for Pesin sets with non-zero Lyapunov exponents.

Calentruir, V. and Bersini, H.: France, Belgium: Frustration induced chaos in a system of coupled ODE's.

• Ergodic Theory and Related Topics (II).

Invited Talk.

Khanin, K. and Kifer, Y. Russia: Thermodynamic formalism for random transformations expanding "in average".

Ito, Shunji (伊藤 俊次): Japan: Limit set of $\{\sqrt{q(q^2 - p)} \mid (q, p, r) \in \mathbb{Z}^3\}$ and domain exchange transformations.

Nakada, Hiroshi (仲田 均): Japan: Dynamics of complex continued fractions and geodesics in H^3 .

Smorodinsky, Meir: Israel: On the ergodicity of the Levy transformation.
 Mezić, I.: USA: Birkhoff's ergodic theorem and statistical properties of dynamical systems.

Short Communication.

Mori, Makoto (森 真): Japan: Perron-Frobenius operator for higher dimensional piecewise linear transformations.

Yuri, Michiko (由利 美智子): Japan: Non-hyperbolic systems and Markov approximations.

Inoue, Tomoki (井上 友啓) Japan: Ratio ergodic theorems related to intermittent dynamical systems.

Forri, Giovanni: Italy: Construction of invariant measures supported within the gaps of Aubry-Mather sets.

Liverani, Carlangelo: Italy: Decay of Correlations.

WEDNESDAY, 25 May.

• Nonhyperbolic Dynamics.

Invited Talk.

Yakobson, Michael: USA (Russia): On the structure of non-hyperbolic attractors.

Newhouse, Sheldon E.: USA: Chaotic attractors in strongly dissipative dynamical systems.

Short Communication.

Zaslavsky, Boris G.: Russia: Stability of Hopf bifurcation in quasi-linear models.

• Complex Dynamical Systems and Low-dimensional Systems (I).

Invited Talk.

de Melo, W.: Brazil: Full families of circle endomorphisms.

Jiang, Yumping: USA: Markov partition, local connectivity, complex bound for infinitely renormalizable folding mappings.

Short Communication.

Makienko, Peter: Russia: Unbounded components in parameter space of rational maps.

THURSDAY, 26 May.

• Complex Dynamical Systems and Low-dimensional Systems (II).

Invited Talk.

Ueda, Tetsuo (上田 哲生): Japan: Complex dynamical systems on projective spaces.

Labarca, R.: Chile: 3-dimensional singular cycles, bifurcation diagram.

Short Communication.

Kameyama, Atsushi (亀山 敦): Japan: The Mandelbrot set and the space of self-similar sets.

Kisaka, Masashi (木坂 正史): Japan: Uniform convergence and convergence of Julia sets.

Li, Wenxia: P. R. China: Multifractal decompositions of generalized Moran fractals.

Mischakow, Konstantin Michael: USA: Isolating neighborhoods, the Conley index and chaos.

Shang, Zai-jin: P. R. China: Existence of smooth families of invariant tori of exact symplectic mappings with relevant estimates.

• Differential and Topological Dynamics (I).

Invited Talk.

Franks, J.: USA: Rotation vectors for area preserving surface diffeomorphisms.

Hiraide, Koichi (平出 耕一): Japan: On homeomorphisms which attain dynamical minimum in their isotopy classes.

Kato, Hisao (加藤 久男): Japan: Chaotic homeomorphisms in dynamical systems and continuum theory.

Swiatek, B.: USA: Box mappings and polynomial dynamics.

Short Communication.

Sunni, N. (鸞見 直哉): Japan: Linearization of expansive maps of tori.

Lee, Keon Hee: Korea: Weak attractors in dynamical systems on non-compact spaces.

Zhang, Meirong: P. R. China: Smooth linearization and centralizers of expanding maps of the circle.

Zhou, Zuo Ling: P. R. China: The levels of the orbit's topological structure for a compact discrete system.

Ruan, Jiong: P. R. China: A new definition of chaos for discrete topological dynamical systems.

Ye, Xiangdong: P. R. China: The dynamics of homeomorphisms of hereditarily decomposable chainable continua.

Guegan, Dominique: France: Non parametric estimation of a chaotic function and of the invariant measure of a dynamical system.

• ODE and Hamiltonian Systems (I).

Invited Talk.

Dumortier, Freddy Eduard: Belgium: Nilpotent singularities of 3-dimensional vector fields.

Kokubu, Hiroshi (国府 寛司): Japan: Homoclinic bifurcations at orientation switch.

Short Communication.

Ji, Xinhua (吉 新华): P. R. China: Asymptotic behavior for n-dimensional Loika-Volterra systems.

Oka, Hiroe (岡 宏枝): Japan: Homoclinic bifurcation generating geometric Lorenz attractors.

FRIDAY, 27 May.

• Complex Dynamical Systems and Low-dimensional Systems (III).

Invited Talk.

Viana, Marcelo: Brazil: High-dimensional strange attractors of diffeomorphisms.

Xia, Jeff: USA: Degenerate Arnold diffusion in Hamiltonian systems.

Shishikura, M. (志倉 光広): Japan: Parabolic bifurcation in holomorphic dynamics.

Short Communication .

Nakano, Shizuo and Schleider, Dietk: Japan: Non-local connectivity of the tricorn and multicorns.

Fujimoto, Yoshinisa (藤本 佳久): Japan: The Fibonacci partition on the connectedness locus.

Yang, Xin-an: P. R. China: Limit cycles of bounded quadratic systems with three finite critical points.

Wang, Li: P. R. China: A proof of the Beyer and Stein conjecture.

• Differential and Topological Dynamics (II).

Invited Talk .

Williams, Robert F. : USA: A partial converse to Perron-Frobenius.

Matsumoto, Shigenori (松元 重剛): Japan: Codimension one foliations and Anosov flows on solvable manifolds.

Bonatti, Christian: France: Persistent nonhyperbolic transitive diffeomorphisms.

Pollack, Mark: U.K. : Comparison theorems and Poincaré series for negatively curved manifolds.

Short Communication .

Weiss, Marysia T. : USA: A topological approach to the Williams conjecture on shift equivalence for full n -shifts.

Sakai, Kazuhiro (酒井 一博): Japan: Shadowing property and transversality condition.

Lin, Zhengsheng: P. R. China: The structure of hyperbolic set of points.

• ODE and Hamiltonian Systems (II).

Invited Talk .

Bruno, Alexander D. : Russia: General approach to the asymptotic analysis of singular perturbations.

Ito, Hidekazu (伊藤 秀一): Japan: On Birkhoff normal forms for integrable symplectic diffeomorphisms.

Pacifico, M. J. : Brazil: The dynamics of families of maps arising from double homoclinic spiraling orbits.

Short Communication .

Crehan, Patrick: Japan: When are flows Hamiltonian?

Wang, Duo: P. R. China: Normal forms of a class of linear generalized Hamiltonian systems.

Ahn, Taeheon: Korea: Analysis of the separatrix map in Hamiltonian systems.

Soleev, Ahmaddon: Russia: Complicated bifurcations of periodic solutions in some systems of ODE.

Shil'nikov, Andrey Leonid: Russia: Local bifurcations and strange attractors.

Hara, Tadayuki (原 雅行) and Sugie, Jizuro (杉江 実郎): Japan: When all trajectories of periodically forced Liénard system rotate around the origin?

WEDNESDAY, 25 and THURSDAY, 26 May.

• Poster Session.

Kim, Gwang Il: Korea: Separatrix map and anti-integrability.

Komuro, Motomasa (小室 元政): Japan: Bifurcations of continuous piecewise-linear vector fields.

Yamaguchi, Yoshihiro (山口 善博) Japan: Remarks on KAM tori connected with stable and unstable manifolds in twist mappings.

Zhao, Hong: P. R. China: Symbolic dynamics for the 2-D dissipative maps.

• Video Session.

Ushiki, Shigehiro (宇敷 重広): Japan: Video exhibition.

International Workshop: Dynamics of Vector Fields
 May 30 - June 3, 1994
 Department of Mathematics, Kyoto University

Tentative Program

May 30th (Mon)

14:00 - 14:30 Opening
 14:30 - 15:30 F. Dumortier (Limburgs Univ., Belgium)
 Singular perturbations and global desingularization

May 31st (Tue)

10:00 - 11:00 S. Nii (Kyoto Univ., Japan)
 On the stability of travelling wave solutions for one-dimensional reaction-diffusion equations
 11:20 - 12:20 K. Mischakow (Georgia Tech., USA)
 to be announced
 lunch
 14:00 - 15:00 K. Sakamoto (Hiroshima Univ., Japan)
 Singular perturbation analyses for a combustion model in long cylindrical domains
 15:15 - 16:15 R. Labarca (Univ. Santiago de Chile, Chile)
 to be announced
 16:30 - 17:00 short communication

June 1st (Wed)

10:00 - 11:00 S. Hayashi (Waseda Univ., Japan)
 A C^1 connecting lemma
 11:20 - 12:20 D. Wang (Tsinghua Univ., P.R. China)
 Normal forms of a class of linear generalized Hamiltonian systems associated semisimple Lie algebra
 lunch
 14:00 - 15:00 K. Tanaka (Nagoya Univ., Japan)
 Periodic solutions of a singular Hamiltonian system
 tea
 16:00 - 17:00 R. MacKay (Univ. Warwick, UK)
 Recent results and open problems in Hamiltonian dynamics

June 2nd (Thur)

10:00 - 11:00 H. Ito (Tokyo Inst. Tech., Japan)
 to be announced
 11:20 - 12:20 J. Xia (Georgia Tech., USA)
 Some generic properties of the symplectic maps
 lunch

14:00 - 15:00 T. Ito (Ryukoku Univ., Japan)

A Poincaré-Bendixson theorem for holomorphic vector fields

15:15 - 16:15 P. Crehan (Kyoto Univ., Japan / Ireland)

Multi-Hamiltonian Structures

16:30 - 17:00 short communication

June 3rd (Fri)

10:00 - 11:00 M. Komuro (Nishi-Tokyo Univ., Japan)

Homoclinic bifurcations of continuous piecewise-linear vector fields

11:20 - 12:20 A. Shil'nikov (Inst. Appl. Math. Cybernetics, Russia)

Codimension 3 local bifurcations and Lorenz attractors

Some of the talks in this workshop are supported by Mathematical Society of Japan and Inamori Foundation.

For more information, please contact:

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