

数理解析研究所講究録 1807

複素力学系の総合的研究

京都大学数理解析研究所

2012年9月

RIMS Kôkyûroku 1807

Integrated Research on Complex Dynamics

January 23 ~27, 2012

edited by Hiroki Sumi

September, 2012

Research Institute for Mathematical Sciences

Kyoto University, Kyoto, Japan

This is a report of research done at the Research Institute for Mathematical Sciences, Kyoto University. The papers contained herein are in final form and will not be submitted for publication elsewhere.

複素力学系の総合的研究

Integrated Research on Complex Dynamics

研究集会

京都大学数理解析研究所の共同研究事業で下記のように研究集会を催しますので、ご案内申し上げます。

研究代表者 角 大輝 (大阪大学 大学院理学研究科)

記

日時：2012年 1月 23日 (月) 14:45～

1月 27日 (金) 12:15

場所：京都大学数理解析研究所420号室

京都市左京区北白川追分町 (市バス 京大農学部前 または 北白川 下車)

プログラム

1月23日 (月)

14:45～15:45 篠原 知子 (Tomoko Shinohara, 都立産業技術高専)
多変数有理写像の不定集合と不変集合の次元

16:00～17:00 Volodymyr Nekrashevych (Texas A & M Univ.)
Symbolic dynamics and self-similar groups

1月24日 (火)

9:45～10:45 片方 江 (Koh Katagata, 一関高専)
微分方程式の定性的理論と複素力学系

11:00～12:00 諸澤 俊介 (Shunsuke Morosawa, 高知大・教育研究)
ブラシュケ積の剰余ジュリア集合について

13:30～14:30 宍倉 光広 (Mitsuhiro Shishikura, 京大・理)
Yoccoz puzzle を用いた Jakobson の定理の証明

14:45～15:45 上野 康平 (Kohei Ueno, 鳥羽商船高専)
Dynamics and weights of polynomial skew products on \mathbb{C}^2

16:00～17:00 奥山 裕介 (Yusuke Okuyama, 京都工繊大)
The density problem on repelling periodic points of non-archimedean rational functions

1月25日 (水)

9:10～9:30 島内宏和 (Hirokazu Shimauchi, 東北大・情報)
On the coefficients of the Riemann mapping function for the exterior of the Mandelbrot set

9:45～10:45 平岡 裕章 (Yasuaki Hiraoka, 九大 IMI)
有理写像と最尤推定復号

11:00～12:00 上原 崇人 (Takato Uehara, 東北大・理)
On rational surface automorphisms

- 13:30~14:30 小木曾 啓示 (Keiji Oguiso, 大阪大・理)
 Quartic K3 surfaces and Cremona transformations - around a question
 of Professor Igor Dolgachev
- 14:45~15:45 宇敷 重廣 (Shigehiro Ushiki, 京大・人間・環境)
 Critical points and Julia sets for complex Hénon maps
- 16:00~17:00 上田 哲生 (Tetsuo Ueda, 京大・理)
 Semi-parabolic implosion in two complex variables

1月26日(木)

- 9:45~10:45 稲生 啓行 (Hiroyuki Inou, 京大・理)
 “Cut-open” rabbit in parameter spaces
- 11:00~12:00 川平 友規 (Tomoki Kawahira, 名大・多元数理)
 複素力学系から生成されるリーマン面ラミネーション
- 13:30~14:30 中根 静男 (Shizuo Nakane, 東京工芸大)
 On saddle basic sets for Axiom A polynomial skew products on \mathbb{C}^2
- 14:45~15:45 足助 太郎 (Taro Asuke, 東大・数理科学)
 剛的な複素二次特性類の非自明性と独立性について
- 16:00~17:00 神 貞介 (Teisuke Jin, 京都工繊大)
 Dynamics of Hénon map: Nevanlinna theory

1月27日(金)

- 9:15~9:45 小島 彰太 (Shota Kojima, 立教大・理)
 Extreme values of infinite compositions of quadratic polynomials
- 10:00~11:00 山下 靖 (Yasushi Yamashita, 奈良女子大・理)
 A computer experiment on primitive stable representations
- 11:15~12:15 角 大輝 (Hiroki Sumi, 大阪大・理)
 Stability, bifurcation and classification of minimal sets in random complex dynamics

なお、プログラムには多少、変更の可能性がります。最新のプログラムと講演要旨は次のホームページをご覧ください：

<http://www.math.sci.osaka-u.ac.jp/~sumi/cpxdyn11meeting.html>

また、懇親会(1月25日夕方)に参加を希望されます方は、1月18日(水)までに角大輝 sumi(@)math.sci.osaka-u.ac.jp まで氏名、所属、電子メールアドレスなどの連絡先をご連絡ください。

Date: January 17, 2012.

Integrated Research on Complex Dynamics Conference

The following conference is hosted by RIMS (Research Institute for Mathematical Sciences) of Kyoto University.

Organizer: Hiroki Sumi (Osaka University)

Date : January 23, 2012, 14:45– January 27, 2012, 12:15.

Place : No. 420 room, Research Institute for Mathematical Sciences, Kyoto University.

Kitashirakawa-Oiwake cho, Sakyo-ku, Kyoto. (Kyoto city bus, “Kyodai-Nogakubumae” or “Kitashirakawa” bus stop)

Program

January 23

14:45–15:45

Tomoko Shinohara (Tokyo Metropolitan College of Industrial Technology)

Indeterminacy sets of rational maps and dimension of the invariant sets

16:00–17:00

Volodymyr Nekrashevych (Texas A & M Univ.)

Symbolic dynamics and self-similar groups

January 24

9:45–10:45

Koh Katagata (National College of Tech.)

Qualitative theory of differential equations and complex dynamics

11:00–12:00

Shunsuke Morosawa (Kochi Univ.)

Residual Julia sets of Blaschke products

13:30–14:30

Mitsuhiro Shishikura (Kyoto Univ.)

A proof of Jacobson’s theorem by using the Yoccoz puzzle

14:45–15:45

Kohei Ueno (Toba National College of Maritime Technology)

Dynamics and weights of polynomial skew products on \mathbb{C}^2

16:00–17:00

Yusuke Okuyama (Kyoto Institute of Tech.)

The density problem on repelling periodic points of non-archimedean rational functions

January 25

9:10–9:30

Hirokazu Shimauchi (Tohoku Univ.)

On the coefficients of the Riemann mapping function for the exterior of the Mandelbrot set

9:45–10:45

Yasuaki Hiraoka (Kyushu Univ. IMI)

Rational maps and maximum likelihood decodings

- 11:00–12:00 Takato Uehara (Tohoku Univ.)
On rational surface automorphisms
- 13:30–14:30 Keiji Oguiso (Osaka Univ.)
Quartic K3 surfaces and Cremona transformations - around a question of Professor Igor Dolgachev
- 14:45–15:45 Shigehiro Ushiki (Kyoto Univ. Human and Environmental Studies)
Critical points and Julia sets for complex Hénon maps
- 16:00–17:00 Tetsuo Ueda (Kyoto Univ.)
Semi-parabolic implosion in two complex variables
- January 26
- 9:45–10:45 Hiroyuki Inou (Kyoto Univ.)
"Cut-open" rabbit in parameter spaces
- 11:00–12:00 Tomoki Kawahira (Nagoya Univ.)
Riemann surface laminations generated by complex dynamical systems
- 13:30–14:30 Shizuo Nakane (Tokyo Polytechnic Univ.)
On saddle basic sets for Axiom A polynomial skew products on \mathbb{C}^2
- 14:45–15:45 Taro Asuke (Univ. of Tokyo)
Independence and non-triviality of rigid second complex characteristic classes
- 16:00–17:00 Teisuke Jin (Kyoto Institute of Tech.)
Dynamics of Hénon map: Nevanlinna theory
- January 27
- 9:15–9:45 Shota Kojima (Rikkyo Univ.)
Extreme values of infinite compositions of quadratic polynomials
- 10:00–11:00 Yasushi Yamashita (Nara Woman's Univ.)
A computer experiment on primitive stable representations
- 11:15–12:15 Hiroki Sumi (Osaka Univ.)
Stability, bifurcation and classification of minimal sets in random complex dynamics

For the newest version of the program, see the following webpage:

<http://www.math.sci.osaka-u.ac.jp/~sumi/cpxdyn11meetinge.html>.

If you would like to participate in the party (January 25, evening), please send an e-mail with your name, affiliation, and e-mail address, to Hiroki Sumi: sumi(AT) math.sci.osaka-u.ac.jp.
Date: January 17, 2012.

複素力学系の総合的研究
Integrated Research on Complex Dynamics
RIMS 研究集会報告集

2012年1月23日～1月27日
研究代表者 角 大輝 (Hiroki Sumi)

目 次

1. Indeterminacy sets of rational maps and dimension of the invariant sets ----- 1
都立産業技術高専 (Tokyo Metro. Coll. Industrial Tech.)
篠原 知子 (Tomoko Shinohara)
2. 微分方程式の定性的理論と複素力学系 ----- 9
一関工業高専 (Ichinoseki Nat. Coll. Tech.) 片方 江 (Koh Katagata)
3. Dynamics and weights of polynomial skew products on \mathbb{C}^2 ----- 14
鳥羽商船高専 (Toba Nat. Coll. Maritime Tech.)
上野 康平 (Kohei Ueno)
4. ON THE COEFFICIENTS OF THE RIEMANN MAPPING FUNCTION FOR THE
EXTERIOR OF THE MANDELBROT SET ----- 21
東北大・情報科学 (Tohoku U.) 島内 宏和 (Hirokazu Shimauchi)
5. On the Structure of Rational Surface Automorphism Groups ----- 31
新潟大・工 (Niigata U.) 上原 崇人 (Takato Uehara)
6. Critical points and Julia sets of complex Hénon maps ----- 39
京大・人間・環境学 (Kyoto U.) 宇敷 重廣 (Shigehiro Ushiki)
7. Riemann surface laminations generated by complex dynamical systems
— and some topics on the Type Problem — ----- 57
名大・多元数理科学 (Nagoya U.) 川平 友規 (Tomoki Kawahira)
8. On saddle basic sets for Axiom A polynomial skew products on \mathbb{C}^2 ----- 66
東京工芸大・工 (Tokyo Polytech. U.) 中根 静男 (Shizuo Nakane)

9 .	INDEPENDENCE AND NON-TRIVIALITY OF RIGID SECONDARY COMPLEX CHARACTERISTIC CLASSES -----	74
	東大・数理科学 (U. Tokyo)	足助 太郎 (Taro Asuke)
1 0 .	Extreme values of infinite compositions of quadratic polynomials -----	80
	立教大・理学 (Rikkyo U.)	小島 彰太 (Shota Kojima)
1 1 .	A computer experiment on primitive stable representations -----	87
	奈良女子大・理 (Nara Women's U.)	山下 靖 (Yasushi Yamashita)
1 2 .	Stability, Bifurcation and Classification of Minimal Sets in Random Complex Dynamics -----	94
	阪大・理学 (Osaka U.)	角 大輝 (Hiroki Sumi)