

数理解析研究所講究録 1610

The second Japanese-Australian Workshop
on Real and Complex Singularities

京都大学数理解析研究所

2008年8月

RIMS Kôkyûroku 1610

*The second Japanese-Australian Workshop
on Real and Complex Singularities*

August, 2008

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.

Preface

These 10 years a lot of joint researches have been done by Australian and Japanese singularitists, in particular, in the field of Real Analytic Singularities. Based on this connection, the First Australian-Japanese Workshop on Real and Complex Singularities was held at the University of Sydney, Australia, in September 2005. Following the first workshop, the Second Japanese-Australian workshop was held at Research Institute for Mathematical Sciences (RIMS), Kyoto University, Japan, in November 2007. This volume is the Proceedings of the second workshop.

The workshop was supported by Grant-in-Aid for Scientific Research (No. 17204007), Japan Society for the Promotion of Science, and RIMS Project. We would not have been able to accept many mathematicians from overseas without their assistance. We would like to take this opportunity to express our gratitude to the investigator of the grant, Professor Shigenori Matsumoto, and the Research Institute. There were 43 participants, mostly from Australia, Europe and Japan. We would like to thank also the participants for their cooperation.

We are going to hold the third Australian-Japanese Workshop on Singularities in Australia next year (September 2009). We hope many mathematicians will participate in it from Japan and Australia, and also from other countries.

July 2008

Satoshi Koike

The second Japanese-Australian Workshop on Real and Complex Singularities

at Room 420

Research Institute of Mathematical Sciences (RIMS), Kyoto University
organised by

Satoshi Koike (Hyogo University of Teacher Education),
Toshizumi Fukui (Saitama University),
Laurentiu Paunescu (University of Sydney), and
Adam Harris (University of New England).

URL: <http://www.rimath.saitama-u.ac.jp/lab.jp/Fukui/2007/JARCS2.html>

PROGRAMME

26th November (Monday)

- 9:30 – 10:30 Kentaro Saji (Hokkaido University, Japan)
Singularities of de Sitter horocyclic surfaces
- 10:45 – 11:45 Shyuichi Izumiya (Hokkaido University, Japan)
Flat lightlike hypersurface in Minkowski space
- 13:15 – 14:15 Adam Harris (University of New England, Australia)
Higher analytic cohomology and the Laplace-Beltrami
operator near an isolated singularity
- 14:45 – 15:45 Vyacheslav Sedykh (Russian State Gubkin University of Oil and Gas, Russia)
The coexistence of real corank 1 singularities
and the contact geometry of space curves
- 16:00 – 17:00 Goo Ishikawa (Hokkaido University, Japan)
Local classification of varieties in the symplectic space

27th November (Tuesday)

- 9:30 – 10:30 Jim Ward (University of Sydney, Australia)
Lines on a cubic surface
- 10:45 – 11:45 Carles Biviá-Ausina (Universitat Politècnica de València, Spain)
Mixed multiplicities of ideals and the effective computation
of Lojasiewicz exponents of complex analytic maps

- 13:15 – 14:15 Alexander Esterov (Independent University of Moscow and
University of Toronto, Russia and Canada)
Poincaré-Hopf indices and Newton polyhedra
- 14:45 – 15:45 Mutsuo Oka (Tokyo University of Science, Japan)
Topology of linear system of plane curves
- 16:00 – 17:00 Tzee-Char Kuo (University of Sydney, Australia)
Arc Space, Morse Stability, Equi-singularities
- 18:30 – Conference dinner

28th November (Wednesday)

- 9:30 – 10:30 Osamu Saeki (Kyushu University, Japan)
Cobordism of Morse maps and its application to map germs
- 10:45 – 11:45 Boldizsár Kalmár (Kyushu University, Japan)
Fold maps, immersions and cobordism
- 13:00 – 14:00 Minoru Yamamoto (Kurume National College of Technology, Japan)
On pseudo-immersions of a surface into the plane
- 14:10 – 15:10 Ruibin Zhang (University of Sydney, Australia)
Representations of Quantum Groups and
Cohomology of Quantum Equivariant Vector Bundles
- 15:15 – Free discussion at Shisendo and night view of Kyoto

29th November (Thursday)

- 9:30 – 10:30 Takashi Nishimura (Yokohama National University, Japan)
An upper bound for multiplicities of co-rank one simple singularities
- 10:45 – 11:45 Michael Eastwood (University of Adelaide, Australia)
Singularities of semiconformal mappings
- 13:15 – 14:15 Alex Dimca (Université de Nice, France)
Characteristic and resonance varieties
- 14:45 – 15:45 Adam Parusiński (Université d'Angers, France)
Equivalence relations of two variable real analytic function germs
- 16:00 – 17:00 Laurentiu Paunescu (University of Sydney, Australia)
Tame nonsmooth inverse mapping theorems

List of participants

Takao Akahori (University of Hyogo, Japan)
Carles Bivià Ausina (Universitat Politècnica de València, Spain)
Liang Chen (Northeast Normal University, China)
Alexandru Dimca (Université de Nice, France)
Michael Eastwood (University of Adelaide, Australia)
Alexander Esterov (University of Toronto, Canada)
Hiroshi Fujimoto (University of Kobe, Japan)
Takuo Fukuda (Nihon University, Japan)
Toshizumi Fukui (Saitama University, Japan)
Adam Harris (University of New England, Australia)
Jonathan Hillman (University of Sydney, Australia)
Goo Ishikawa (Hokkaido University, Japan)
Hirotada Ito (Kinki University, Japan)
Shuzo Izumi (Kinki University, Japan)
Shyuichi Izumiya (Hokkaido University, Japan)
Boldizsár Kalmár (Kyushu University, Japan)
Masayuki Kawashima (Tokyo University of Science, Japan)
Yumiko Kitagawa (Osaka City University, Japan)
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Mutsuo Oka (Tokyo University of Science, Japan)
Adam Parusiński (Université d'Angers, France)
Laurentiu Paunescu (University of Sydney, Australia)
Osamu Saeki (Kyushu University, Japan)
Kentaro Saji (Hokkaido University, Japan)
Kazuhiro Sakuma (Kinki University, Japan)
Vyacheslav Sedykh (Russian State Gubkin University of Oil and Gas, Russia)
Shinichi Tajima (Niigata University, Japan)
Masatomo Takahashi (Muroran Institute of Technology, Japan)
Tadashi Takahashi (Kobe University, Japan)
Susumu Tanabe (Kumamoto University, Japan)
Masamichi Takase (Shinshu University, Japan)
James N. Ward (University of Sydney, Australia)
Tadayuki Watanabe (Kyoto University, Japan)
Yuuki Yamaguchi (Kinki University, Japan)
Minoru Yamamoto (Kurume National College of Technology, Japan)
Shoji Yokura (Kagoshima University, Japan)
Ruibin Zhang (University of Sydney, Australia)

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第二回日豪実・複素特異点研究集会

RIMS 研究集会報告集

2007年11月26日～11月29日

研究代表者 小池 敏司 (Satoshi Koike)

副代表者 福井 敏純 (Toshizumi Fukui)

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