

## FOREWORD

The *seventh Japanese-Australian Workshop on Real and Complex Singularities* (JARCS SYDNEY 2017) was held at the University of Sydney, Australia, during the period 25–29 September 2017. There were 31 participants, mostly from Japan and Australia. The workshop, dedicated to Tzee-Char Kuo 81st birthday, covered a variety of topics in singularity theory and related areas. In particular, the development of robotic algorithms for image processing and complex machine learning, computational methods developed in connection with decision theory and complex systems. We brought together experts, early career researchers, and doctoral students from Australia, China and Japan. This volume contains research papers in real and complex singularities, algebraic and differential geometry, computational algebra and on applications of singularities in economics. It is our hope that this volume reflects the lively research atmosphere of this conference.

Each article in this volume has been peer refereed. We wish to express our appreciation to the authors who have contributed to this volume and the referees for their cooperation. The meeting was sponsored by the School of Mathematics and Statistics of the University of Sydney, the AMSI and the Mathematical Sciences Institute of ANU, whose support is gratefully acknowledged.

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

*Organisers:*

*Laurențiu Păunescu*

*Alexander Isaev\**

*Adam Harris*

*Scott McCallum*

*Florica Cirstea*

*Michael Hare*

*Satoshi Koike*

*Toshizumi Fukui*

---

\* Vale **Professor Alexander Isaev**. It is with deep sadness to announce that Professor Alexander Isaev, one of the organisers, passed away on 20 August 2019.

**List of Participants**

Takao Akahori (Hyogo University, Japan)  
Hirokazu Anai (Fujitsu Labs, Japan)  
Michael Barwick (Sydney University, Australia)  
Kevin Coulembier (Sydney University, Australia)  
Alan Fekete (Sydney University, Australia)  
Alex Fish (Sydney University, Australia)  
Toshizumi Fukui (Saitama University, Japan)  
Michael Harre (Sydney University, Australia)  
Adam Harris (University of New England, Australia)  
Shihoko Ishii (Tokyo Woman's Christian University, Japan)  
Goo Ishikawa (Hokkaido University, Japan)  
Satoshi Koike (Hyogo University of Teacher Education, Japan)  
Tzee-Char Kuo (Sydney University, Australia)  
Gus Lehrer (Sydney University, Australia)  
Yutaka Matsui (Kinki University, Japan)  
Scott McCallum (Macquarie University, Sydney)  
Katsusuke Nabeshima (Tokushima University, Japan)  
Vinoth Nandakumar (Sydney University, Australia)  
Laurențiu Păunescu (Sydney University, Australia)  
Jacqui Ramagge (Sydney University, Australia)  
Osamu Saeki (Kyushu University, Japan)  
Jiro Sekiguchi (Tokyo University of Agriculture and Technology, Japan)  
Ulrich Thiel (Sydney University, Australia)  
Valentina Wheeler (Wollongong University, Australia)  
Geordie Williamson (Sydney University, Australia)  
Ying Xu (Sydney University, Australia)  
Oded Yacobi (Sydney University, Australia)  
Stephen Yau (Tsinghua University, P. R. China)  
Ruibin Zhang (Sydney University, Australia)  
Yang Zhang (Sydney University, Australia)  
Zhou Zhang (Sydney University, Australia)

**Speakers:**

T. Akahori, H. Anai, M. Barwick, A. Fish, T. Fukui, M. Harre, A. Harris, S. Ishii, S. Koike, T.-C. Kuo, G. Lehrer, Y. Matsui, S. McCallum, K. Nabeshima, O. Saeki, J. Sekiguchi, G. Williamson, O. Yacobi, S. Yau.