

数理解析研究所講究録 1641

Computational Geometry and Discrete Mathematics

京都大学数理解析研究所

2009年4月

RIMS Kôkyûroku 1641

Computational Geometry and Discrete Mathematics

April, 2009

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.

Guest Editor's Foreword

This RIMS Kokyuroku volume is the proceedings of Workshop on Computational Geometry and Discrete Mathematics held in RIMS Kyoto University on 10/16-19, 2008 as an event of the RIMS International Project Research 2008 Discrete Structures and Algorithms. The workshop consisted of 12 invited talks and 7 contributed talks.

In response to the request, 14 papers extending the abstract of talks have been submitted to the proceedings.

Together, they form a cross-section of modern theory of computational geometry and related discrete mathematics, and the guest editor is pleased to present this special issue as an evidence of the success of the RIMS International Project Research as well as our research community on discrete mathematics.

Takeshi Tokuyama
Guest Editor (Workshop Organizing Chair)
Graduate School of Information Sciences, Tohoku University,
Sendai, Miyagi, 980-8579, Japan.
Email:tokuyama@dais.is.tohoku.ac.jp

Computational Geometry and Discrete Mathematics
計算幾何学と離散数学

RIMS 研究集会報告集

2008年10月16日～10月19日
研究代表者 徳山 豪 (Takeshi Tokuyama)

目 次

1. Lines pinning lines	-----	1
Polytechnic U.	Boris Aronov	
KAIST	Otfried Cheong	
INRIA Lorraine	Xavier Goaoc	
2. Analyzing automorphism groups of oriented matroids by semidefinite programming	-----	8
東大・情報理工学系(U. Tokyo)	宮田 洋行(Hiroyuki Miyata)	
東大・ナノ量子情報エレクトロニクス(U. Tokyo)		
	森山 園子(Sonoko Moriyama)	
東大・情報理工学系 / ナノ量子情報エレクトロニクス(U. Tokyo) /		
JST ERATO-SORST	今井 浩(Hiroshi Imai)	
3. Computational Analysis of Orientations of Matroids	-----	16
東大・情報理工学系(U. Tokyo)	松本 宜丈(Yoshitake Matsumoto)	
東大・ナノ量子情報エレクトロニクス(U. Tokyo)		
	森山 園子(Sonoko Moriyama)	
東大・情報理工学系(U. Tokyo)	今井 浩(Hiroshi Imai)	
U. New Brunswick	David Bremner	
4. Lattice- Valued Fuzzy Convex Geometry	-----	22
京大・文学(Kyoto U.)	丸山 善宏(Yoshihiro Maruyama)	
5. Constant-Working-Space Algorithms	-----	38
北陸先端科学技術大学院大(JAIST)	浅野 哲夫(Tetsuo Asano)	
6. Algorithms for Geometric Problems in Intensity-Modulated Radiation Therapy	-----	45
U. Notre Dame	Danny Z. Chen	
"	Chao Wang	
7. Convex bodies passing through holes	-----	68
琉球大・教育(U. Ryukyus)	前原 潤(Hiroshi Maehara)	
"	徳重 典英(Norihide Tokushige)	

8. On the Three-Dimensional Orthogonal Drawing of Outerplanar Graphs (Extended Abstract) -----	74
東工大・理工学(Tokyo Inst. Tech.)	田湯 智(Satoshi Tayu)
	大島 拓也(Takuya Oshima)
	上野 修一(Shuichi Ueno)
9. Computing a Sequence of Circumscribing Polygons for Convex Polygon -----	90
東海大・理(Tokai U.)	大西 建輔(Kensuke Onishi)
電通大・情報システム学(U. Electro-Communications)	
	星 守(Mamoru Hoshi)
10. Unsolved Problems in Robustness of Geometric Algorithms -----	99
東大・情報理工学系(U. Tokyo)	杉原 厚吉(Kokichi Sugihara)
11. On k -vertex guarding simple polygons -----	106
U. Texas Dallas	Sergey Bereg
12. 適応的計算幾何 -----	114
Pohang U. Sci. Tech.	安 熙甲(Hee-Kap Ahn)
東工大・情報理工学(Tokyo Inst. Tech.)	岡本 吉央(Yoshio Okamoto)
13. Advances in Surface Meshing -----	125
Hong Kong U. Sci. Tech.	Siu-Wing Cheng
14. Geometric Problems on Ad-Hoc Network Design -----	135
東北大・情報科学(Tohoku U.)	徳山 豪(Takeshi Tokuyama)